ABSTRACT OF

The Erasmus Wilson Lectures

ON THE

PATHOLOGY AND TREATMENT OF THOSE DISEASES OF THE LIVER WHICH ARE AMENABLE TO DIRECT SURGICAL INTERFERENCE.

Delivered at the Royal College of Surgeons of England on Feb. 21st, 23rd, and 25th, 1898,

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LECTURE II.[1]

Delivered on Feb. 23rd.

[THE first portion of this second lecture was devoted to the consideration of subphrenic or subdiaphragmatic abscess which in a considerable number of cases is dependent upon, or associated with, a pathological condition of the liver and which may be defined as a localised collection of pus or pus and gas between the inferior aspect of the diaphragm and the adjacent surface of the liver. Subphrenic abscess may be either intra-peritoneal or extra-peritoneal; its pathological causes may be divided into the following groups: (1) traumatic causes; (2) affections of the alimentary canal; (3) affections of the kidney and perinephric tissue; (4) inflammatory conditions of the gall-bladder or the bile-ducts (5) diseases of the thoracic viscera; (6) suppuration in a hydatid cyst; and (7) pyæmia. Mr. Waring then continued:]

Of the cases of which I have notes 2 were due to ulceration of the duodenum, 1 to an ulcer of the stomach, and 1 probably to a similar condition, 1 to pyæmia, 1 to ulceration of the transverse colon, 1 to dysentery, 1 to perforation of the vermiform appendix, and 1 to an empyema of the basal portion of the right pleura. A subphrenic abscess may contain a variety of micro organisms. When its onset and development are gradual the symptoms are somewhat indefinite and the early manifestations are often attributed to slight gastric or bilious affections. The overlying pleura may become inflamed, in which case friction sounds may be heard at the basal portion of the chest on the affected side. Shoulder tip pain or pain at the angle of the scapula is frequently noticeable and is due to irritation of the terminal branches of the phrenic nerve where they are distributed to the inferior aspect of the diaphragm. A distressing cough may also be due to the same cause. When the onset is sudden it is generally due to perforation of one of the abdominal viscera such as rupture of a collection of pus in the perinephric region or in the neighbourhood of the cæcum, or it may be due to the perforation of an ulcer of the duodenum or of the stomach. When the abscess comes on as the result of injury a history of the occurrence of this can usually be obtained. Pain localised in the upper portion of the abdomen usually follows rupture and escape of pus or contents of the alimentary canal; when a subphrenic abscess forms this pain is limited to the subphrenic area. There are also certain physical signs which are of the greatest importance in making a diagnosis. These vary slightly according as to whether the abscess is on the right side, on the left, or on both, and also whether the contents are pus or pus and gas. In most cases the liver is pushed downwards and can be felt to protrude a variable distance below the costal margin. This, however, is not constant, as the diaphragm may be pushed upwards and the abscess encroach on the thoracic cavity. Depression of the liver when it occurs is not pathognomonic of subphrenic abscess, as it may be due to an abscess of the liver, empyema and effusion into the right pleural cavity, or hydatid cysts in the liver or the subphrenic space. On palpation the tissues overlying a subphrenic abscess are more resistant than normal, the respiratory movements are diminished, and the abdominal and thoracic walls are more fixed. On percussion the conditions met with depend upon whether the contents of the abscess are pus or pus and gas. In the former case the hepatic dulness is increased, especially in an upward direction, the upper margin of the dulness corresponding to the position of the diaphragm. Above this there is ordinary lung resonance. When, however, the abscess contains gas the liver dulness is diminished and may be almost absent. It is replaced by a resonant note which is said to be "amphoric" in character and above this there is ordinary lung resonance. The "amphoric" resonance resembles that met with in pneumothorax. On auscultation ordinary vesicular breath sounds can be heard in the upper portion of the chest, usually as low as the third or fourth intercostal space. On shaking the patient a "succussion splash" may be heard, but often the condition of the patient will not allow this to be done.

Many cases of subphrenic abscess present considerable difficulties in diagnosis. The affection is liable to be mistaken for an abscess in the upper portion of the liver, a solid tumour of the liver, a subphrenic hydatid cyst, a pleural effusion, and when it contains gas for a pyopneumothorax.

It is often necessary to explore the swelling or area of increased dulness with the needle of an aspirator. When pus or pus and gas are withdrawn it is clear that an abscess exists. According to many observers if the needle move upwards and downwards with the respiration a subphrenic abscess is said to be present. This is due to the needle being fixed in the diaphragm. This sign, however, cannot be said to be pathognomonic, as the needle may be fixed in the thick walls of an abscess and not in the diaphragm, or if the structure be pushed upwards to a considerable extent the needle may pass into the abscess cavity and have no movements communicated to it. When an encysted purulent collection of the basal portion of the chest is under consideration it will generally be almost impossible to make a definite diagnosis and distinguish it from a subphrenic abscess. If, however, the swelling be shown to contain pus this is a matter of little consequence since the treatment of both affections is similar. It occasionally happens that a communication is established between a subphrenic abscess and the overlying pleural cavity or the pericardium. Sometimes the pus tracks either downwards or laterally; in the former case it may burst into the peritoneal cavity and cause fatal peritonitis, as in one of my cases, or it may burst into some part of the alimentary canal or the pelvis of the kidney, or it may extend to the surface of the body and point either through one of the lower intercostal spaces or in the upper part of the abdomen.

Treatment.—Whenever a subphrenic abscess is diagnosed surgical measures should be at once adopted for the evacuation of the pus and the drainage of the pus-containing-cavity. The collection of pus may be reached by three different routes, either through the overlying portion of the abdominal wall, immediately below the costal margin, or through the overlying portion of the thoracic wall by resections of portions of one or more ribs and incision of the pleura and diaphragm, or from the lumbar region by an incision which is directly below the lower border of the last rib. The locality and connexions of the abscess determine which of these routes should be adopted. The method by incision through the abdominal wall is the best and is most likely to be followed by a successful result. When the subphrenic abscess is due to extension from the perinephric tissues or to suppuration in the region of the cæcum the incision should be made in the lumbar region. The main details of the operations are similar to those recommended in the treatment of abscesses of the liver. Of the 9 cases of which I have notes 3 were not submitted to operation; of these 1 recovered after the abscess had burst into the right lung and the contents had been expectorated; the others died. Of the remaining 6, 4 were operated upon by the abdominal method, 2 recovered and 2 died, 1 was operated upon by the thoracic method with a fatal result, and 1 by the lumbar method also with a fatal result. According to Lang, who has collected 176 cases from surgical literature, the percentage of recoveries after operation is 47·9 per cent. and of those not operated upon 12·3 per cent.

[1] An Abstract of Lecture I. was published in THE LANCET of March 5th, 1898.

2. HYDATID CYSTS OF THE LIVER.

[After an account of the various developments and the morphology of the tapeworm, tænia echinococcus, Mr. Waring said that it is probable that the ova are conveyed into the human body by the hands rather than by fresh vegetables or by water used for drinking, for it is most frequent in men of uncleanly habits who by their occupation come into contact with dogs. Hydatid disease is not very uncommon in London, the records of St. Bartholomew's Hospital for the years 1887-1896 showing that 25 cases had been treated in which the liver was involved, but in the provinces and in Scotland it is comparatively rare. After describing the symptoms and complications of hydatid cyst of the liver Mr. Waring continued:]

In my list of cases the cyst was in the right lobe in 17 cases, in the left lobe 5 times and in both once. In 22 cases the cyst was single, in 1 it was double, and in 1 there were multiple cysts.

Diagnosis.—The diagnosis of a hydatid cyst of the liver is often somewhat difficult owing to the indefinite character of the symptoms. The presence of a slowly growing painless swelling in the hepatic region and connected with the liver, which moves synchronously with the respiratory movements, is elastic or fluctuates on palpation, and causes few symptoms, will suggest the presence of a hydatid cyst. In doubtful cases it may be justifiable to puncture the swelling with the needle of an aspirator in order to withdraw some of the contents for examination. If the fluid contains hooklets and fragments of cyst wall the nature of the swelling will be determined. The most important affections from which a hydatid cyst of the liver has to be distinguished are localised solid enlargements of the liver, simple cysts, abscess, enlarged and dilated gall-bladder, cystic and solid growths of the kidney, pleural effusion, hydatid cyst of the abdominal wall, hydatid cyst of the base of the lung, and subphrenic abscess or cyst.

Treatment.—The surgical methods which have been adopted for the cure of hydatid cyst of the liver may be divided into the five following groups: (1) treatment by puncture—aspiration, trocar and cannula, and aspiration and injection of drugs; (2) the application of caustics; (3) electrolysis; (4) incision with drainage and incision without drainage; and (5) excision. In my opinion the best method of treatment of uncomplicated cases is that by incision and drainage, but in some cases it is advisable to excise the entire cyst, while in others a combination of the two methods is the best. I shall now consider the different methods separately.

1. In *treatment by puncture* three varieties have been practised: firstly, simple puncture with the needle of an aspirator and evacuation of a part or the whole of the fluid contents of the cyst; secondly, puncture with the needle of an exploring syringe, withdrawal of some of the fluid contents of the cyst, and then injection of a chemical substance such as a solution of perchloride of mercury, carbolic acid, iodine, or bile; and, thirdly, puncture with a trocar and cannula, the cannula being left in position in order to establish drainage. Simple puncture has in some cases been successful, but it is usually necessary to repeat it several times and then it fails to effect a cure in a large proportion of cases. It is, in addition, liable to be immediately fatal. Several cases have been recorded, one of which I have seen, in which simple puncture has been at once fatal. No explanation appears to be forthcoming as to the cause of the fatal result. It has been suggested that death has been caused by the aspirating needle having injured the solar plexus or other important nerve centre. According to Thomas, who has collected the statistics of different observers, the mortality after this form of treatment has been 19 per cent., whilst there has been 46 per cent. of failures.

2. *Treatment by the application of caustics*, such as potassium hydrate or Vienna paste, has been used with the object of opening and draining hydatid cysts of the liver. The mortality of this very unsurgical procedure was over 33 per cent. and on this account the operation has been wisely abandoned.

3. *Treatment by electrolysis* has been tried in the case of hydatid cysts, but the results which were obtained did not justify the retention of the procedure as a recognised surgical operation.

4. *Treatment by incision.*—Several modifications of the operation are practised, these depending (1) upon whether the operation is carried out in two sittings or is completed at one time; (2) upon the removal or non-removal of a portion of the cyst wall; and (3) upon the form of drainage which is established. Each of these operations may be performed either through the abdominal wall, through the thoracic wall, or through the lumbar region. In the majority of patients the operation can be carried out through an incision in the anterior abdominal wall. An abdominal operation at one sitting is recommended in all cases in which the hydatid cyst can be felt to protrude below the costal margin. A vertical incision three inches or more in length is made over the most prominent portion of the abdomen. This incision may be either in the linea semilunaris, in the linea alba, or through one of the recti muscles. When the peritoneum has been opened the cyst will generally be exposed in the bottom of the wound. An incision two inches in length and parallel with the parietal wound is made in it and the fluids and daughter cysts are evacuated.

5. *Treatment by excision.*—When the cyst is of moderate size and does not extend deeply into the hepatic tissue it may be possible to dissect out the true cyst from the adventitious wall of fibrous tissue which has been formed around it. If this can be readily done the cyst is removed and the margins of the wound in the liver substance united by the insertion of a series of silk sutures. The insertion of sutures and the approximation of the lips of the hepatic wound are facilitated by the resisting wall of the cyst, which is composed of fibrous tissue.

If the cyst cannot be readily removed by dissection it should be drawn well up in the parietal wound and the distal portion if practicable cut away with strong scissors. Removal of a portion of the cyst wall enables the remaining part to close up by granulation more quickly and the patient recovers in a shorter time than when the entire cyst is left behind. When this has been done the internal aspect of the cyst is well scraped with a Volkman's spoon in order to remove as far as possible the calcareous matter and the parenchymatous portion of the cyst wall. The interior of the cyst is then irrigated with an antiseptic solution and packed temporarily with a long strip of gauze or a sponge. Next the margins of the incision in the cyst are united to those of the upper portion of the abdominal wound by the insertion of a series of silk sutures. Each suture should pass through the marginal portion of the cyst and then through the serous, muscular, and fascial layers of the abdominal wall. Some surgeons prefer to pass these sutures through the skin as well, but in my opinion it is an advantage not to pass them through the skin, since the sinus then closes up more quickly and a less marked scar results. That portion of the parietal wound which is not used for suturing the cyst is carefully closed by the insertion of a series of salmon-gut sutures. The packing within the cyst is now removed and the interior of the cyst packed with a long strip of aseptic gauze one end of which protrudes externally. This serves to absorb the secretion from the wall of the cyst and to prevent the occurrence of hæmorrhage. Some surgeons put in a rubber drainage tube at the time of the operation, but it is preferable not to commence the use of a tube of this kind until a day or two after the operation. Ordinary aseptic dressings are now applied and fixed in position by bandaging. On the day after the operation the dressings are removed and the packing is taken out from the interior of the cyst. The cavity is irrigated, a soft rubber tube of moderate calibre passed down to the bottom of the cyst, and dressings are applied. This method of dressing is repeated daily until the cyst cavity has closed up from the bottom and the external wound healed. The silk sutures which have been used for attaching the cyst to the abdominal wall and for closing the external wound should be removed at the end of ten or fourteen days. Care must be taken to remove all of them otherwise they may become a source of irritation and help to keep open a sinus or fistula.

It has recently been proposed to treat hydatid cysts in a manner somewhat different to the above. When the surface of the cyst is exposed through an abdominal incision its wall is incised and the contents are completely evacuated. All hæmorrhage is arrested and then the cyst is dropped back into the abdominal cavity and the parietal wound closed. It is claimed for this method of treatment that the fluid which is secreted by the cyst is absorbed by the peritoneum without doing any harm and that the period of treatment is considerably shortened. I have had no experience of this operation, but it appears to me that one runs a risk of

contamination of the peritoneum and subsequent development of cysts in connexion with the peritoneum and also of the possibility of adhesions being formed between the cysts and a coil of intestine which may become a cause of intestinal obstruction. When the cyst extends upwards so as to encroach upon the thoracic cavity and is not readily accessible by the abdominal route without cutting through several inches of sound liver tissue the parasite ought to be attacked through the chest-wall by a transpleural operation such as the one described in connexion with hepatic abscess and subphrenic abscess. The stages of the operation are similar. In this form of operation several days may be allowed to elapse between the attachment of the cyst to the chest-wall and the evacuation of its contents and the establishment of drainage. When the cyst is situated in the posterior portion of the right lobe of the liver and projects below the last rib it may be dealt with through a lumbar incision similar to the one mentioned in abscess of the liver or subphrenic abscess. When a hydatid cyst of the liver has ruptured into the peritoneal cavity the abdomen is opened and the contents of the cyst are removed from the peritoneum as far as possible. Then the cyst is treated as above. In like manner when the rupture involves the pleura the escaped contents are removed through a thoracic incision and afterwards the cyst is stitched to the margins of the wound and drained.

Prognosis.—Of the cases of which I have notes twenty-one were treated by an abdominal operation. Of these sixteen recovered and five terminated fatally. Two of the fatal cases were suppurating at the time of operation and in one death did not occur till four years afterwards, when suppuration occurred in a sinus which had remained not closed. One was treated by a thoracic operation with a fatal result. This was suppurating at the time of operation. Five cases were treated by aspiration. Three of these were afterwards treated by an abdominal incision and in the others the swelling still remained, but they escaped from observation and the final result was not known. According to Thomas the mortality in cases which have been treated by the one-stage abdominal operation has been 10·29 per cent. and in those treated by the thoracic operation 29·4 per cent. The treatment of multilocular hydatid cysts I shall consider in my next lecture, when I am dealing with resection of the liver.

The Lettsomian Lectures

ON

THE AFFECTIONS OF THE URINARY APPARATUS IN CHILDREN.

Delivered before the Medical Society of London on Feb. 7th and 21st and March 7th, 1898,

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LECTURE III.[1]

Delivered on March 7th, 1898.

PATENT URACHUS.

MR. PRESIDENT AND GENTLEMEN,—A patent condition of the urachus after birth is not exceedingly rare and is one of the causes of those masses of granulations which are found springing from the umbilicus out of the centre of which and issuing from a minute aperture a fluid with all the characteristics of urine often exudes in small quantities. A ligature applied to the base of this fleshy tumour at once destroys it and obliterates the canal leading to the apex of the bladder. This condition is usually noticed in very young infants soon after the separation of the cord, but Sir T. Smith relates a case in which it occurred in a boy, aged two years, and Mr. Bryant one in a boy, aged eight years, and the patency will occasionally persist into adult life as in the case described by the late Mr. Paget, of Leicester, of a man, aged fifty-five years, from whom he removed a ring-shaped calculus by a finger passed down through the umbilicus and into the urachus. This and another patent urachus in an infant he succeeded in closing by paring the edges and uniting them with harelip pins. Should ligature of the granulation growth fail to close the canal this may be effected by means of the electric cautery or by a plastic operation.

Two very interesting cases are recorded in which the urachus was reopened by pressure of the urine from below the first by Mr. Savory of a boy, aged thirteen months, who had difficulty and pain in micturition and presented the symptoms of calculus vesicæ. Gradually an abscess formed at the umbilicus, which on being opened gave exit to urine. The boy gradually sank and at the post-mortem examination there was found a polypus in the bladder obstructing the ureters and the orifice of the urethra. The urine thus obstructed forced an opening through the recently closed urachus and thus gave rise to the abscess.[2] A similar case is related by Mr. Ball as occurring in a boy aged ten years. Mr. Sutton states[3] that the urachus may sometimes grow equally with the bladder, retain a communication with it, and give rise to a so-called bifid bladder. It may dilate unequally and form a chaplet of small cysts, and in some rare instances may serve as a starting point of a cystic tumour outside the peritoneum of enormous dimensions. One examined and reported by Mr. Sutton and Dr. Aveling weighed nearly 51b., and Mr. Lawson Tait has recorded a number of instances of similar tumours under the name of extra-peritoneal cysts.

HIATUS OF THE BLADDER.

To account for the existence of that distressing deformity hiatus of the bladder, several theories have been suggested. Dr. Ahlfeld opines that these persistent fissures in the middle line of the body are due to excessive traction of an abnormally distended umbilical vesicle and allantois which pulls the viscera forwards. This distension is due to a general dropsical tendency in the fœtal membranes and appendages, and in support of this Dr. Magnussen recites three cases of ectopion (*sic*) in which spina bifida and meningocele—that is to say, dropsical processes in the vertebral region—were present. Against this I may state that of the many cases of this defect that I have seen I remember none in which it was associated with these deformities, and they may well have been instances of concomitant defects of development in the median line. Dr. Paul Reichel, of Würzburg, maintains that the theory of Dr. Duncan that congenital defects of the bladder and penis are caused by atresia of the urethra and the bursting of these organs from pressure of the urine is not tenable. Ectopion (*sic*) of the bladder is simply a persistence of the primitive cleft throughout the greater part of its extent, preventing the formation of the anterior wall of the bladder, the anterior abdominal wall, and the symphysis pubis, besides interfering with the formation of the external genitals. The cleft may be partly closed, forming various modifications of the deformity. In other words, it is an arrest of development which gives rise to this condition as well as to epispadias. M. Tourneux and M. Durand explain it as the result of the undue extension forwards of what the former has named the "urethral lame," a prolongation of the "bouchon cloacal" which intervenes between the lower end of the urogenital sinus and the exterior and thus shuts in the sinus. This leads to an increase in the size of the anterior part of the aperture by which the urogenital sinus is put into communication with the exterior.[4] The extent may vary from a complete exposure of the posterior wall of the bladder with separation of the recti and imperfect union of the symphysis pubis to the slightest condition of epispadias where only a portion of the wall of the urethra is exposed and where some sphincter power remains, so that the most distressing feature of the deformity, the uncontrolled dribbling away of urine, is not met with, and every variation between these two extremes. Sometimes the bladder, though in itself perfectly formed, may prolapse through the urethra or even the urachus. The appearances of this deformity are so familiar as to need

[1] Lectures I. and II. appeared in THE LANCET of Feb. 12th and 26th respectively.

The specimen is to be seen in St. Bartholomew's Hospital Museum.

[3] THE LANCET, Feb. 5th, 1887, p. 256.

[4] See Ballantyne: Edinburgh Hospital Reports, vol. iv.

no further description, but there are certain conditions associated with it which are not easy of explanation. The tortuous and dilated state of the ureters which is a frequent accompaniment may be due to the irritation of the surface from exposure which induces a constant discharge from the ureters and produces the same conditions as ensue from enuresis due to other causes. Although this complication has been frequently observed it can hardly be constant or the well-known healthiness of some individuals who are afflicted with this deformity and who pass into adult life could not be maintained. The tendency, however, of these patients is to die from secondary inflammatory conditions and kidney complications. Dr. Ultzmann,[5] confirming this, quotes M. Berger[6] who found that of seventy-one cases collected by him only twenty-three reached the age of twenty years, the causes of death being skin inflammations, erysipelas, secondary inflammatory affections, and frequently kidney diseases. The state of hyperæmia and congestion of the mucous membrane are most favourable to the existence of micro-organisms and to their extension in the urinary tract. It is due to the establishment of these micro-organisms that there is maintained a chronic inflammation of the mucous surface from which an alkaline or feebly acid urine is discharged which deposits phosphates in such abundance as to be the greatest cause of distress to the patient and the most troublesome obstacle to successful treatment by the surgeon.

The operative measures for the alleviation of this defect I have only space to enumerate. First, there are the methods of Dr. Daniel Ayres, Dr. Pancoast, Professor John Wood, and Mr. Holmes which aim at forming a covering for the exposed mucous membrane by turning over flaps of skin from the surface of the abdomen and so covering the exposed surface that the urine is directed on to the urethra and guided into the orifice of an apparatus as it falls uncontrolled from the ureters. By this proceeding the urine is made to issue from a single aperture and further attempts to improve the shape of this opening can be made by raising a flap of scrotal tissue and lifting it over the penis to attach it to one turned down from the surface of the abdomen. Many modifications of this plan have been followed by myself and others and it is impossible to give outlines for the direction of the incisions, as they must be adapted to the requirements of each individual case and tissue must be drawn from the parts where it can best be spared and where resulting cicatrisation will be least harmful. I have found that the skin of the prepuce, which is usually redundant, can generally be made available to cover some part of the aperture.

It is remarkable how tolerant of operations are the subjects of this deformity. I have on several occasions removed the testes or ovaries on both sides with large hernial sacs as a preliminary to the plastic operation which has been performed at a later date. But notwithstanding these facts the proceedings are very disappointing as regards ultimate results. Complete covering is rarely obtained by one operation and small apertures require to be dealt with by subsequent manœuvres. Trendelenburg in one case operated ten times and one of my cases has been at least six times under my hands. The disappointments met with are due to the persistence of small openings caused by the permeation of urine through the edges of the united flaps which it is very difficult to close. But the greatest drawback to success is due to the septic condition of the urine and the large quantities of phosphatic material which it secretes. Sometimes this will accumulate to such an extent as to form considerable calcareous masses. A child for whom I succeeded in making a very fair covering for the bladder requires every few months to have one or more of these masses removed. The hairs, too, which grow from the overturned flaps of skin become hypertrophied and form nuclei upon which these concretions collect. Professor John Wood, who had an experience of forty cases, could only say that they were rendered much more comfortable, but does not mention the casualties or troubles subsequent to operation. Distressing as this condition appears to observers it must be borne in mind that many subjects of this deformity are in other respects strong and healthy and live to a good age, and personally it is only in the most urgent cases that I am inclined to propose an operation which is not without risk, entailing long confinement and many subsequent procedures and which at best may afford but little alleviation. Other methods have been tried, such as that recommended by Mr. Simon of establishing a fistulous communication between the ureters and the rectum or removal of the mucous membrane of the bladder and planting the ureters in the gutter of the penis or in the rectum, but the mortality after these proceedings is very heavy, mainly in consequence of inflammation spreading up the ureters and causing an acute septic interstitial nephritis. Trendelenburg and others have sought by dividing the sacro-iliac synchondrosis, which should be done before the fifth year, to narrow the interval between the pubic bones and to approximate the margins of the exposed bladder and then suture them together. Mr. Makins has published[7] an account of this operation which he performed upon a boy, aged five years, and which was fairly successful. He found a great improvement in the condition of the urine to result from the application to the mucous surface of pinewood bags impregnated with perchloride of mercury. By thus subduing the septic condition, the character of the urine improves and the phosphatic deposits diminish, and this indicates a course which should certainly be adopted before proceeding further. In the same way, when the ureters are healthy, I believe that much assistance might be gained by temporarily maintaining a catheter in each and so preventing the urine from coming in contact with the mucous membrane or with the edges of the united surfaces. A mode of operating which seems to promise greater success is that which is suggested by Mr. Milton, of Cairo, and which is described by Mr. Anderson.[8] This consists in dissecting up flaps of the mucous membrane of the bladder and urethra for about half an inch from without inwards and uniting them by a double set of sutures over a large catheter. Two marginal skin flaps are then dissected up from without inwards and tension being relieved by two lateral incisions their edges are brought together over the closed bladder by means of wire sutures and harelip pins. Lastly, I must not omit to mention the ingenious suggestion offered by Mr. Reginald Harrison, who, from a boy, aged fifteen years, removed the left kidney and eleven months later attached the upper end of the right ureter to a wound in the loin. The urine that issued was neutral and free from the tendency to form phosphatic deposits which existed when flowing over the surface of the bladder.

EPISPADIAS.

Epispadias is not a frequent deformity and may exist independently of any defect of the abdominal walls and be confined only to that portion of the urethra which passes through the glans, or may extend backwards into the spongy portion of the canal. But since behind these parts there exists more or less sphincter power the results are not so distressing as in the more pronounced form where the opening extends backwards to the prostatic region, although the bladder and the symphysis pubis may be normally formed. This latter form imperatively calls for some attempt on the part of the surgeon to remedy the condition, but again, as in hiatus vesicæ, the great obstacle to success is the constant and uncontrolled discharge of urine, although in these cases there is not the same tendency to phosphatic deposit owing to the normal and protected condition of the bladder. I have once attempted to remove this difficulty by draining the bladder through a perineal incision, though in this instance the result was disappointing. Time does not permit me to describe the various plans which are recommended for the remedy of this defect, but by far the most practical suggestion is that recently described by Dr. Cantwell.[9] The patient should be at least ten years of age. The bladder is first drained through a perineal wound. When this is established two parallel lines of incision are carried down between the mucous membrane and the skin from the symphysis to the end of the glans joining above the bladder opening. A flap is then formed of the whole urethra from the glans backwards, and this being held up the cavernous bodies are separated. The urethral flap is then laid in the gutter thus formed and held in position by two sutures through the mucous membrane and the skin and tied on the under surface of the penis. A silver catheter is then laid in the urethra and a canal formed by continuous suture of the free edges of the mucous membrane over it. Above this the corpora cavernosa are brought together and

[5] Krankheiten der Harnblase, 1890.
[6] Semaine Médicale, 1883.
[7] Transactions of the Royal Medical and Chirurgical Society.
[8] Transactions of the Clinical Society, 1892.
[9] Annals of Surgery, 1895, vol. ii., p. 690.

reunited by a continuous suture. The skin-flaps are joined over this and a few stitches are passed through the fat of the mons Veneris. Mr. Clutton informs me that he has had three most satisfactory results from this plan.

In a very complete monograph[10] Dr. J. W. Ballantyne has drawn attention to that very rare malformation, so-called epispadias in women, of which he has collected thirty-three recorded observations. I cannot do more than quote his conclusions, but his admirable paper is of the greatest interest as drawing attention to a cause of enuresis in females which may easily be overlooked unless careful examination of the parts be made: "It has only one symptom—more or less complete incontinence of urine—and in its least marked degree even this may be absent. It consists in the absence of a greater or smaller part of the anterior urethral wall with the division of the clitoris into two parts, and the presence of a median gutter or groove in the region of the anterior commissure of the vulva: the symphysis pubis is normally closed and so is the anterior bladder wall. In its least marked form the urethra simply opens above the clitoris instead of below it, but in all the other forms there is splitting of the clitoris, and the existence of a median furrow. Palliative treatment consists in the wearing of a urinal; radical methods are found in plastic operations for the lengthening and narrowing of the urethra and for the restoration of the anterior vulvar commissure and clitoris."

Mr. Makins in an obstinate case of this defect successfully closed completely the inferior opening of the bladder and established a supra-pubic urethra.

HYPOSPADIAS.

Hypospadias is a fairly common defect and varies greatly in its degrees, and examples are frequently met with in which the opening of the urethra may be situate at any point between the perineum and the spot at which the frenum is attached to the body of the penis. The two chief points of interest in regard to this deformity are as to the possibilities of procreation and the question, which not unfrequently arises in extreme cases, as to the sex of the individual. These I must not discuss but must limit myself to the question only of its effects on the urinary apparatus. There is, even in those cases where the orifice is in the perineum, a power of control, since the opening of the urethra is always in front of the membranous portion, but such patients are unable to micturate except in a sitting position and an operation is necessary in order to direct the urine to a point nearer to the end of the penis. The most usual position for the opening of the urethra is just behind the attachment of the frenum. It is generally extremely minute and many cases have come under my notice in which it has been declared that no opening existed, a state of things which is almost unknown. The minuteness of this opening, at whatever position it is situate, may lead to difficulty in passing water, and in some cases that I have seen the orifice has become so obstructed by mucus and dirt as to cause pain and delay and in one instance a gleety discharge. This trouble is easily remedied by opening the urethra for a short distance and attaching the lappet-like flaps by stitches to the skin on either side. I have in several cases been able to trace an hereditary transmission of this defect and Mr. Lingard relates an instance[11] in which it was traced through six generations and tells of a case where it was transmitted by the widow of a hypospadian to four sons by a second husband who had no such deformity. I have met with one case of congenital fistula where a probe passed through the natural meatus issued at an orifice midway along the under surface of the penis, the edges of which were thin and resembled those of the meatus. Mr. Holmes describes a case in which there were four openings at different parts of the perineum, from all of which the urine issued as well as from the meatus. A case has been described by Mr. Gay[12] in which there existed a double urethra, one on the dorsum and one in the normal position, both communicating with the bladder but not with one another, and another similar case has been recorded.[13] An elaborate article on the origin and nature of these fistulæ has been written by M. René le Fort.[14]

[10] Edinburgh Hospital Reports, vol. iv.
[11] THE LANCET, April 19th, 1884, p. 703.
[12] Transactions of the Pathological Society, vol. xiv.
[13] Brit. Med. Jour., 1891.
[14] Annales des Maladies des Organes Génitaux, vol. xiv., 1896, p. 624, et seq.

CYSTITIS.

A chronic catarrh of the bladder occurs from the presence of calculus or tumour or any cause inducing urinary retention, but an acute state of inflammation rarely arises spontaneously. One instance occurred in a child under my care upon whom I had operated for the cure of a spina bifida by the injection of Morton's solution. Although this was followed by no constitutional disturbance there was complete and obstinate retention which persisted for over three weeks, during which a catheter had to be passed every few hours, and there ensued an inflammation of the bladder with muco-purulent urine and all the other symptoms of cystitis. These gradually disappeared and a subsequent injection of the tumour caused its consolidation and was not followed by similar symptoms. The child was aged eight months and is now perfectly well. But there occurs occasionally what has been named an "acid purulent cystitis," to which my notice was first called by Mr. Treves who has kindly supplied me with the notes of the case which directed his attention to it. "A boy, aged two years and nine months, passed blood and pus from the urethra. When twelve months old the urine was continuously full of pus and the discharge has continued without change ever since. He passes water seventeen to eighteen times in the twenty-four hours, half an ounce at a time. There is no pain and no wasting. Urine: specific gravity 1023, full of pus, no mucus, many uric acid crystals, no renal casts and always markedly acid. No tubercle bacillus. The bacterium coli commune found in almost pure cultures. He has been repeatedly sounded and examined under ether with no result. There is a very tuberculous history in the family. The child looks well and is not wasted. There is no fever and no evidence of renal disease." This affection has been studied and described by foreign authors but has been recognised very rarely in this country. Some years ago Clado directed attention to special rod-like organisms associated with pus which occurred in acid urine and which he called pyogenic bacteria but which have since been identified as the bacillus coli communis, and it has been shown by Professor Schmidt and others that their passage into the bladder induces cystitis. The anatomy of the parts, as first insisted upon by Dr. Escherich, explains the greater frequency of the condition in girls than in boys. In 1894 he reported seven cases in girls, the patients ranging from seven to nine years of age. He regarded the condition as somewhat trivial, curing each case by vesical lavage with creolin lotion and the internal administration of salol. Trumpf in more than one paper would have us regard the condition as worthy of occasional anxiety. He brings forward twenty-nine cases which were under his own observation, twenty-one were girls and eight boys, the youngest was five weeks old and the oldest nine years. He divides the cases into trivial and grave. In the former the symptoms are principally local and in no way affect the general health of the child. Ten were of this nature, three of them suffering from vulvitis at the same time. In the graver form rapid emaciation takes place and severe local and constitutional symptoms manifest themselves. Apathy, somnolence, collapse, and vomiting are associated with strangury, hypogastric and lumbar pains, and in two of his cases pyelitis, uræmia, rapid emaciation, and death. The urine in both types is offensive, acid, and albuminous, with varying quantities of pus, leucocytes, and epithelium, according to the severity of the attack. It is usually of a pinkish or opalescent colour and on bacteriological examination the bacillus coli is readily found. In severe forms the deposit may amount to half the total bulk of urine passed. Mild cases recover on an average in two weeks. Dr. Denys thinks that direct infection of the bladder is only possible when there is a slight catarrhal condition; others argue that the vesical infection occurs from contact with the bacillus-laden coils of intestine. Dr. Escherich, Dr. Czerny, and Dr. Trumpf find the bacillus coli present in the blood in cases of enteritis, especially the clinical variety known as follicular. In a recent work by Dr. Melchior, of Copenhagen, which is reviewed by Dr. Lindley Scott,[15] he concludes that the colon bacillus is the bacterium of the urine and the organism most commonly associated with cystitis, pyelitis, and pyelonephritis, and he found it in all varieties of cystitis, in acid, neutral, and ammoniacal urine. When the secretion was acid Dr. Melchior always obtained a

[15] British Journal of Dermatology, September, 1897.

pure culture of the colon bacillus; when ammoniacal it always proved to be accompanied by one or several of those micro-organisms which have the power of decomposing urea. He dismisses internal medication as practically useless and believes only in irrigation of the bladder with solutions of nitrate of silver varying in strength from 1 in 500 to 1 in 200 A close perusal of this book is invaluable to those interested in the subject and the whole study of this form of cystitis is deserving of much closer attention than it has received in this country.

TUBERCULOSIS OF THE BLADDER.

Tuberculous ulceration of the bladder occurs much more frequently after the age of puberty than before, but I have met with a few cases in children and there are records of others. The diagnosis presents even more difficulty in children than in adults and the question of most vital importance as regards treatment, but which is at the same time most difficult to determine, is whether the ulceration commences primarily in the mucous membrane of the bladder or is secondary to disease in some of those organs which communicate with it. In the case of the testes or vesiculæ the primary focus is readily manifest, but in the case of the kidneys it is not so easily determined. Mr. Mansell Moullin, writing on this subject, thinks that primary tubercle of the bladder is probably more common than is generally supposed and the secondary origin is in all probability exaggerated. He considers that the neck of the viscus is involved more frequently than the fundus, not because of the proximity of the openings of the ureters and vasa deferentia, but because of the greater vascularity of that part and its more active functional capacity. It is as an aid to distinguish its independent origin, as apart from being a sequel to similar disease in the kidney, that the cystoscope may prove of the greatest service. Not only may the extent and character of the ulcer be revealed, but the nature of the discharge from each ureter may be seen and the presence or absence of pus therefrom will afford evidence of the state of the respective kidneys. In an article in the *Deutsche Zeitung für Chirurgie* Dr. Griffenhagen points out that the bladder is most frequently infected from the kidneys, less often from the prostate, and comments on the remarkable resisting power of the mucous membrane of the bladder to the invasion of the tubercle bacillus. He had met with many examples of chronic renal tuberculosis with no bladder complication, yet the orifice of the ureter is especially liable to be affected by this bacillus. I have recently had under my care a young man who had had one testicle removed for tuberculous disease and whose remaining testis and both vesiculæ present the typical characteristics of tuberculosis of those organs. The bacillus has been detected in his urine, but he has no frequency of micturition or any other symptom of bladder involvement. In the Transactions of the Clinical Society, 1875, the case of a girl, aged nine years, is related by Mr. Humby in which ulceration had at two points perforated the bladder; one at the apex led into a circumscribed abscess in the peritoneum, which had discharged at the umbilicus, and the second, at the back of the viscus, had opened into the bowel, through which matter had escaped by the anus.

The diagnosis of these cases from those of calculus is not usually difficult, one pronounced feature being that in tuberculosis the frequency and pain of micturition are as great or greater during night, whereas rest allays and diminishes these symptoms in cases of calculus. The amount of hæmorrhage as a rule is slight, but may be excessive if ulceration is extensive or deep. I have already pointed out that in renal tuberculosis the urine remains acid, but when the bladder is invaded it usually becomes alkaline with the increase of purulent discharge. Reliance cannot be placed upon the absence of the tubercle bacillus from the urine, but when present in large numbers it indicates an extensive amount of disease. In the case of a young woman whom I saw some years ago the disease had advanced too far for any hope of successful treatment, but in a boy who was under my charge the disease was certainly for a time confined to the bladder and I gave considerable relief by making a perineal opening and thus draining the viscus. But since that time the modern mode of suprapubic cystotomy has come into practice and undoubtedly offers a means of relieving this very distressing malady. Mr. Battle has brought the advantages of this operation to our notice by an account of a very interesting case.[16] The patient was a girl, aged twenty years, and therefore above the age to which I have endeavoured to confine my observations. But the treatment which he successfully pursued was undoubtedly that which I should myself follow. After giving a fair trial to general and local treatment he performed suprapubic cystotomy. He found that partial healing had taken place as a result of previous treatment, but an extensive ulcer remained, and the surface of this was scraped and then dabbed over with a solution of chloride of zinc. The urine, which had been slightly alkaline, became acid and in less than a year after being first seen the girl appeared perfectly well and could hold her urine for three hours. I agree with Mr. Battle in preferring the application of chloride of zinc, which is so efficacious in the treatment of tuberculosis of other parts, to the use of the actual cautery, which has been applied successfully by M. Guyon, M. Reverdin, and others. Mr. Cheyne believes that much of the benefit of this operation lies in the rest which is given to the bladder by the drainage of the viscus and in this way he treated a boy, aged four years. Mr. Morton, after performing the suprapubic operation, scraped the ulceration and rubbed in iodoform, afterwards keeping up drainage by the aid of Cathcart's suction apparatus. The ulceration in the bladder healed but the patient died with tuberculosis of the left kidney and calculus in the right ureter. A patient was shown at St. Bartholomew's Hospital who exhibited tuberculous ulceration of the sinus left by a suprapubic wound which had been made for the treatment of ulceration of the bladder. The plan of injecting iodoform and other compounds has not proved satisfactory, although Professor Landerer claims value for the injection which he prescribes composed of balsam of Peru, chloride of sodium, and other drugs.

TUMOURS OF THE BLADDER.

Tumours of the bladder occur but rarely in childhood. One such case I saw at the Hospital for Sick Children, Great Ormond-street, under the care of Mr. Marsh.[17] The girl was aged two years and when one year old a dark, fleshy-looking growth projected from the vagina and was ligatured and fell off. Then came retention of urine with attacks of pain and straining. On examination under chloroform a large bunch of polypi were found just within the vulva projecting from the vagina and distending the urethra. They varied in size and colour, some being pale and others dusky purple. Death took place sixteen months after the disease had been first observed. The report by Mr. Butlin and Mr. Marcus Beck described it as an overgrowth of connective tissue. Two cases have occurred in the wards of my colleague, Mr. Owen, both happening in boys, for one of which perineal and for the other suprapubic cystotomy was performed. I have inspected all the specimens of this form of tumour which are to be found in the various hospital museums in London. The best known is that in the Hunterian Museum which was presented by Mr. Crosse, of Norwich, and which is depicted in his treatise on calculus. The patient was a boy, aged two years, whose illness began about six months previously to his death with frequent micturition and dysuria. There was no hæmaturia. Perineal section was eventually performed and many gelatinous polypi were excised. The child died forty-four hours after operation. Mr. Targett in a most comprehensive paper[18] groups together all these polypoid growths attached to the mucous coat of the bladder in children, which are described as mucous polypus, fibro-sarcoma, fibro-myxoma, myxosarcoma, and the like, and allowing that the vast majority of primary vesical growths of children are of the polypoid type — that is, rounded elevations of the mucous coat with more or less constricted pedicles and arranged in clusters—maintains that the minute structure of these formations is of subsidiary importance, that pathologically they are best considered as members of one group and that clinically they have one common character—viz., that they are uniformly fatal, though death is chiefly, if not entirely, due to urinary obstruction and its backward effects upon the kidneys. The growths may extend in the substance of the mucous coat, into the muscular tissue of the vesical wall, as secondary deposits in the cellular tissue outside the wall of the bladder and as deposits in the neighbouring lymphatic glands. Other writers, as, for example, Dr. Vander Veer, classify the tumours which occur in children under the same headings as those of adults, but Mr. Targett has examined the subject

[16] Transactions of the Clinical Society, 1890.

[17] Transactions of the Pathological Society, vol. xxv.

[18] Transactions of the Pathological Society of London, vol. xlvii.

so closely that his conclusions may be accepted as final. The only record of any innocent tumour is that described as a small papilloma which was removed by Mr. Bryant in the eye of a catheter. Treatment must generally be limited to relieving the bladder of the confined urine either by a perineal or a suprapubic opening. But removal has more than once been successfully performed. Thus Professor Humphry removed by means of lateral cystotomy and with forceps and finger-nail a fibro-sarcoma from a boy, and a case of great interest occurred in the practice of Professor Billroth, where in a boy, aged twelve years, with frequent painful micturition, a tumour could be felt in the region of the bladder which was suspected to be connected with the back of the viscus. The lateral incision was made and a tumour of nearly the size of a fist with an uneven surface was found projecting from the posterior wall into the cavity of the bladder. It measured 3 in. in its longest diameter, 5 in. in its broadest, and 3 in. in basal circumference. Owing to its size it was found impossible to extract the tumour through the perineum. A suprapubic incision was then made, both recti were cut across and a transverse incision was carried into the bladder. The tumour was then torn through near its base with the finger and the pedicle dissected out. It appeared to take its origin from the muscular coat and had not attacked the peritoneum. It is described as principally a myosarcoma and in some places a myocarcinoma The boy was discharged in a month perfectly well. Clearly the only chance for surgical relief lies in an early diagnosis and a suprapubic incision when on inspection the possibility of removal can be considered and, if feasible, carried out in the same manner as tumours are removed from the bladders of adults.

A case in which retention of urine was occasioned in a girl, aged two years and four months, by a primary sarcoma of the vagina is related by Mr. D'Arcy Power.[19] The growths were of polypoid appearance and had been observed to project from the vulva five months previously. She died with symptoms of uræmia. The specimen is preserved in the Museum of St. Bartholomew's Hospital. The growths are classed as myxosarcoma, whilst some more dense were of the type of fibro-sarcoma. Mr. Power has collected a series of twenty-six cases principally from German literature. Except from this cause retention of urine only occurs in children by reason of the pressure of an abscess in the perineum or the impaction of a stone in the urethra, which is at once readily detected by the sound or catheter. If the stone is arrested in any part of the urethra anterior to the scrotum it can be extracted with suitable forceps or by means of an incision made directly upon it, but if it be further back it can generally be pushed into the bladder and can be removed later or at once by the lithotrite and evacuator. If, however, it remains obstinately lodged in the scrotal or perineal part of the urethra it is easily removed by a median incision.

EXTRAVASATION OF URINE.

The impaction of a calculus or the opening of an abscess into the urethra are the only causes which may give rise to extravasation of urine in young patients with the exception of rupture of the urethra by falls upon the perineum and the subsequent obstinate form of stricture which ensues upon that accident. The treatment of such injuries and their consequences in no wise differs from that followed in the case of adults, but considering the firmness of the cicatricial tissue which forms at the site of these lesions, the rapidity of its contraction and the speed with which destructive changes in the kidneys supervene and the fistulæ which form, it may sometimes be necessary to resort to some extreme measure in order to avert these after-consequences. Many operations have been devised for dealing with this obstinate form of stricture. John Hunter proposed to reach the rear of the constriction through the apex of the bladder with a metal instrument to be met by another in front. Mr. Furneaux Jordan in his "Surgical Injuries" describes an operation through the rectum for the treatment of impassable stricture. In the *Practitioner*, 1888, I related the case of a boy, aged fourteen years, who a year after the operation for the re-establishment of the urethra, which had been divided by a fall, returned with the stricture firmly closed and with two sinuses in the perineum through which all urine was voided. The tissues of the perineum and scrotum were densely infiltrated. In order to reach the utmost limit of the sound urethra with the smallest possible wound I performed what is termed posterior catheterisation—that is to say, I opened the bladder above the pubes and passed a bent probe through the vesical orifice of the urethra down to the posterior surface of the stricture. Cutting down upon this I attached the mucous membrane of the urethra to the edges of the incision. The result was most satisfactory. The sinuses closed, the perineum resumed its normal condition, and the boy passed his urine voluntarily at intervals of three hours. At the end of a year I inspected him and found him very greatly improved in health. The urine was voided from a nipple-like elevation close to the posterior edge of the scrotum. No irritability of the bladder existed and the control over it was perfect. The urine, which previously to the operation contained pus and albumin, was perfectly normal and the cicatrix of the abdominal wound was firm and level. So satisfactory was his condition that he and his parents declined any further surgical interference.

[19] Transactions of the Pathological Society of London, vol. xlvii.

PHIMOSIS.

On the many baneful effects which result from an elongated or contracted prepuce I have no space to dilate and can only allude to their effects upon the urinary apparatus. Reference has already been made to cases of hydronephrosis which are ascribed solely to this condition, and as a reflex effect may be mentioned nocturnal enuresis and daily incontinence and all the symptoms of calculus including even hæmaturia. The hypertrophy of the bladder which ensues from this cause has been pointed out by Sir James Paget. The eczematous state which so often exists at the end of the prepuce frequently starts a slight urethritis in the region of the meatus by which urination is rendered painful and at the same time frequent and which if permanent causes the meatus to contract and renders its division by the scalpel a necessity. For these and very many other reasons connected with the effects of this condition in youth and in later life I consider that the simple operation of complete circumcision should be performed at an early age wherever complete retraction cannot easily be performed and whenever the prepuce considerably overlaps the glans.

The urethra of girls is not often the site of any surgical affections, but a remarkable case is described by Mr. Davies-Colley [20] in which the orifice of the ureter protruded through the meatus in a girl, aged eighteen months. This protrusion was ligatured and after death the right kidney and ureter were found to be healthy but the left kidney was suppurating and diseased by chronic obstruction. He considered that the condition was due either to the impaction of a calculus or to congenital constriction of the orifice of the ureter.

Mr Croft has related a case of inversion of the bladder in a girl, aged fourteen years. The bladder was turned inside out through the urethra and meatus. It was easily reduced under chloroform and did not recur. Similar cases have been reported by Dr. Lowe and Mr. Crosse, of Norwich, who by a timely recognition of the parts prevented their removal by the surgeon.

Mr. Bryant [21] describes a case of extreme prolapse of the female urethra occurring in a girl, aged six years. It was reduced and the child remained well. Several similar cases are mentioned. The prolapse seems to occur as the result of straining in the later years of childhood. It does not cause much trouble in micturition, but the protrusion is tender and the mucous membrane often bleeds. All these conditions must be carefully diagnosed from urethral caruncle which, common enough in women, is found occasionally to exist in children.

And now, Sir, time bids me conclude these somewhat scattered observations on some points of the subject which I set before myself. That I have by any means exhausted it I cannot pretend to hope; but that I have taxed, if not exhausted, the kind patience with which you and the Fellows of the Medical Society of London have been amiable enough to listen to what I found to say I greatly fear, and it remains only to thank you for your patience and to crave indulgence for the many omissions of which I am fully conscious.

[20] Transactions of the Pathological Society of London, vol. xxx.
[21] Transactions of the Royal Medical and Chirurgical Society, vol. lxxvii.

THE RELATION OF VARIATIONS IN THE LEVEL OF THE GROUND-WATER TO THE INCIDENCE AND SEASONAL DISTRIBUTION OF MALARIAL FEVERS IN INDIA.[1]

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VARIOUS statements are to be found in the literature of malaria with regard to the influence of rainfall, moisture in the air, and variations of temperature on the occurrence of fever, but very little on the influence of variations of the ground-water. Some observations were, indeed, made by Dr. T. R. Lewis and Brigade-Surgeon-Lieutenant-General D. D. Cunningham on this point in India, but the data they collected were from measurements by many different observers and do not appear to have been made sufficiently regularly or for long enough a time to allow of any very definite conclusions being based on them. Waterlogging of a soil by a constantly high ground-water is too well known a cause of malaria to need more than a passing reference. It is rather in dry places that observations are required and it is chiefly this side of the question that will be dealt with in the present paper. The rainfall is to some extent an index of the variations of the ground-water level, but only partly so. As is well shown in the charts in Davidson's "Diseases of Warm Climates" the maximum fever rate may occur slightly before, with, or after, the maximum rainy season; but I shall hope to show that the differences in this respect depend largely on the distance of the ground-water from the surface before the rainy season begins. Professor Lane Notter, in his well-known book on Hygiene, correctly remarks that "the development of malaria may be connected either with a rise or fall of the ground-water." Hirsch in his "Geographical Pathology" writes: "In the most intensely malarious spots of the tropics the prevalence of the disease is generally associated in a most marked manner with the rainy season. The fever makes its appearance with the commencement of the rains and lasts the whole period. If the rainfall be not excessive, it reaches a maximum usually when the rain ceases and continues with decreasing extent and virulence until the setting in of the cold season." This again is generally true, but with considerable variations in different places; and these variations, I believe, depend chiefly on the depth of the ground-water level and also to some extent on the nature of the soil, especially in relation to its power of retaining moisture. It is more especially in countries where there is an absence of marshy or water-logged soil that our knowledge of the factors which influence the occurrence and distribution of malarial fevers is defective. Chota Nagpur is mentioned by Hirsch as one of the exceptional places where malarial fevers prevail on a dry soil in the absence of marsh or waterlogging.

In 1895 I commenced a series of observations for the purpose of trying to ascertain the causes which influenced the seasonal incidence of malarial fevers in the dry district of Chota Nagpur. My observations were made in Doranda, the cantonment of Ranchi, which is the headquarters of the district. This place is situated on a dry, porous soil and is 2000 ft. above the sea level and my observations were made on some 400 men of the 11th Bengal Infantry, who all lived in lines on a small area of ground. Records were made of the maximum, minimum, and ground temperatures (the latter at a depth of 6 ft.), the rainfall, the moisture in the air, and lastly the level of the water in three wells which immediately surrounded the lines, taken twice a week by means of a float attached to a metallic tape. The average of the distance of the water from the surface of the ground in the three wells was taken to give the level of the ground-water beneath the lines in which the men were living. Notes were taken in shorthand of each man who came to hospital with fever and the day on which he first began to suffer from it was noted. The blood of the majority of the cases was examined for the malarial organism, and its frequent discovery, together with the precisely similar character of the symptoms in all the cases, proved that they were really malarial in their nature. The fever season in this place is the rainy season, which lasts from the middle of June to the middle of October as a rule, but varies somewhat in different years. More than 80 per cent. of the yearly fever occurs at this time. During the cold weather and the hot, dry months there is very little fever and during these months the ground-water level was from 25 ft. to 35 ft. beneath the surface in these lines. In 1895 the rainy season began about the middle of June and during the latter half of this month very nearly 10 in. of rain fell. The air, from being very dry, became saturated with moisture, the temperature fell some 15° and varied very rapidly, falls of 25° having been registered within a few hours. In short, all the atmospheric conditions were altered but there was no increase in the fever-rate over that of the previous dry hot month of June. The water-level only had not materially changed—that is to say, it had only risen from 35 ft. to 28 ft. from the surface, being still too low to affect the fever-rate.

The subsequent course of the fever and ground-water variations are shown in Chart I. The upper curve shows the variations in the level of the ground-water, while the lower curve illustrates the variations in the average number of fresh cases of fever in the same periods. From July 4th to 13th there was a very heavy rainfall and the water level rose from 28 ft. to 16·5 ft. from the surface. At the same time the fever-rate first began to rise, so that the daily average of fresh cases was 2·16, or fifteen cases in the week, instead of only six cases in the whole of the previous month. Then there was a slight break in the rains and the water fell 7 in. in the next period, which is practically only a cessation in its rise, but immediately the fever-rate fell to one case a day. Then the water rose rapidly once more and with it the fever-rate increased up to 2·5 cases a day, only to decline again with the next fall in the water-level, during the first week in August. Once more the water rose until it was only 5½ ft. below the surface of the ground on Aug. 18th—that is, a total rise of nearly 30 ft. in eight weeks—and again the fever rose until the average daily number of cases reached three, the highest rate for the whole year. During the next month there was but little rainfall and both the curves steadily declined. In the third week of September, however, there was a fall of 5 in. in two days; the water level once more rose and was again accompanied by a rise in the fever-rate. After this the rains practically ceased and the water fell steadily, with the exception of a very slight rise when it was 13 ft. from the surface, which was apparently too small to influence the fever; and when it had receded to 17 ft. the fever ceased. During the next year observations were taken for me in the same manner by Surgeon-Lieutenant Wilson, of the Indian Medical Service, and a very similar chart was obtained which I unfortunately left behind in India; but I have obtained further confirmation of the relationship between the rise and fall of the water and that of the fever in some tea-gardens in Assam, which I shall come to very shortly.

I must first, however, explain Chart II., which illustrates the monthly fever-rate and the monthly rainfall over a series of ten consecutive years in the same place and among the men of the several regiments who successively lived in the same spot. The first and third lines illustrate the fever-rate, while the second and lowest show the rainfall. The general relationship between the two will be at once apparent, while a closer study reveals several points of interest. In the first place, it will be observed that while the rains usually begin in the month of June the fever does not increase to any extent until a month later. This is due to the fact already mentioned, that the water is always some 35 ft. from the surface of the ground at the commencement of the rainy season (and was still 28 ft. down at the end of June in 1895 although 10 in. of rain had fallen), so that it is not until there has been heavy rain in July on the top of that of June that the ground-water rises high enough to influence the fever-rate. Secondly, it will be noted that in the years of exceptionally heavy rain, such as in 1887, 1894, and 1895, the fever is also unusually great; while in the years 1890, 1891, and 1892, when the rainfall was deficient, the fever-rate was also very low. But in addition to the absolute amount of the rainfall, the regularity or otherwise of its distribution exercises an important influence on the rapidity and extent of the variations of the ground-water and so on the amount of fever. Again, the amount of the rainfall in the seven months preceding the regular rainy season will have some

[1] A paper read before the Epidemiological Society on Feb. 18th, 1898.

effect in so far as it influences the level of the water at the beginning of the rainy season, for if it be then higher than normal a given quantity of rain will have a greater effect in raising the water level near to the surface of the ground. All these factors, however, act by causing a greater or less variation in the water level and all the differences in the amount and distribution of the fever in the years illustrated in the chart can be explained by the combination of these various factors in different degrees. Thus in the years 1886 and 1895 both the rainfall and fever rate were average ones. In 1887 both the rainfall and fever rate were heavy, but the former began very early—namely, in May—and, for the reasons already given, the fever did not increase until July. On the other hand, the rains ceased very early, there being unusually little in September, and the fever season was also a short one. In 1889 the rainfall was unevenly distributed, but its total quantity was not large and the fever was about the average. In 1890 and 1891 both the rainfall and fever rate were low. In 1892 there was a remarkable absence of the usual increase in the fever during the rainy season, which at first sight seems to form an exception to the rule which I am illustrating, but on looking a little more closely it will be found to form a true example of the maxim that it is the exception which proves the rule. Thus in the first this particular place the amount of fever varies in proportion to the amplitude of the variations of the ground-water level, and the first chart points to the relationship of the rise and fall of the ground-water level to the increase and decrease of the incidence of the fever being so definite and constant that the two must be causally connected. The amount and distribution of such fever as occurs in the dry first half of the year remain to be explained. That the small rainfall of this period does not influence it is seen from the fact that in the first half of 1893 there was more rain than usual but very little fever, while, on the other hand, in the same months of 1889 there was very little rain but a good deal of fever. Nor would it be expected that there should be a relationship between the two at this time, for the water-level is always from 25 ft. to 35 ft. down during these months. If, however, the amount of fever in the early dry months of one year be compared with that of the previous rainy season it will be found that the two are in proportion. For example, there was more fever than usual in the early part of the years 1888 and 1894 in correspondence with the high fever rate of the preceding years. On the other hand, there was very little fever in the early part of the years 1891 and 1893 in relation to the low rate of the two previous rainy seasons. The years 1889 and 1895 are apparent exceptions, but once

CHART 1.

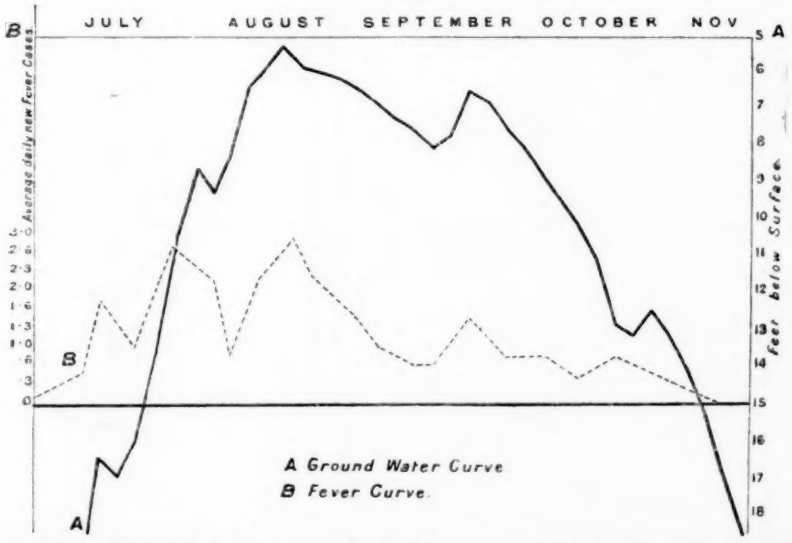


Chart showing the variations in the level of the ground-water and the incidence of fever during four months at Chota Nagpur.

place, it may be pointed out that there was exceptionally little rain in the early months of the year, while the rains of the previous year had both been deficient and had ceased very early, there being no rain whatever in October, a most unusual occurrence. Then the rainfall of 1892 was below the average; and, thirdly, it was most evenly distributed in the different months, so that less than 12 in. fell in any one month. The water-level must therefore have been very low at the beginning of the rainy season of this year and the rains when they came were both deficient and very evenly distributed, so that it is obvious that all the factors which make for a low and constant water-ground level were present during this year, and it is certain that of the whole ten years the water must have remained further from the surface of the ground and have varied less in this than in any other year of the series.

In 1893 the rainfall was very heavy and the fever rate proportionately so, while in 1894 we have the precisely opposite characters to those of 1892—namely, both a very heavy and a very unevenly distributed rainfall, over 19 in. having fallen in both July and August. The consequence was that in this year there was the highest fever rate of any, the water-level having risen so high that it flowed out of the mouth of one of the wells. It may then be said that these charts confirm the previous one in proving that in more they are of the kind which prove the rule, for in these two years, as well as in 1892, a new regiment came to the station early in January and the following figures show that the amount of fever that they suffered from in the early part of the years mentioned was in proportion to the fever rate among them in their previous station, even when that was in a different province :—

Regiment.	Reached Doranda.	Previous stations.	Former fever-rate.	Fever, Doranda.
8th Bengal Infantry.	January, 1889.	Barrackpore and Chittagong ...	480 per 1000	88
12th Bengal Infantry.	January, 1892.	Benares	267·1 per 1000	20
11th Bengal Infantry.	January, 1895.	Bareilly	116·3 per 1000	9

The obvious explanation of these facts is that the cases which occur at the time of the year when the water level is low are relapses from among those men who were attacked during the preceding rainy season. This I found was actually the case in the early part of 1896 in Doranda, for although only 25 per cent. of the men of the regiment suffered from fever in the rainy season of 1895 yet more than

CHART 2.

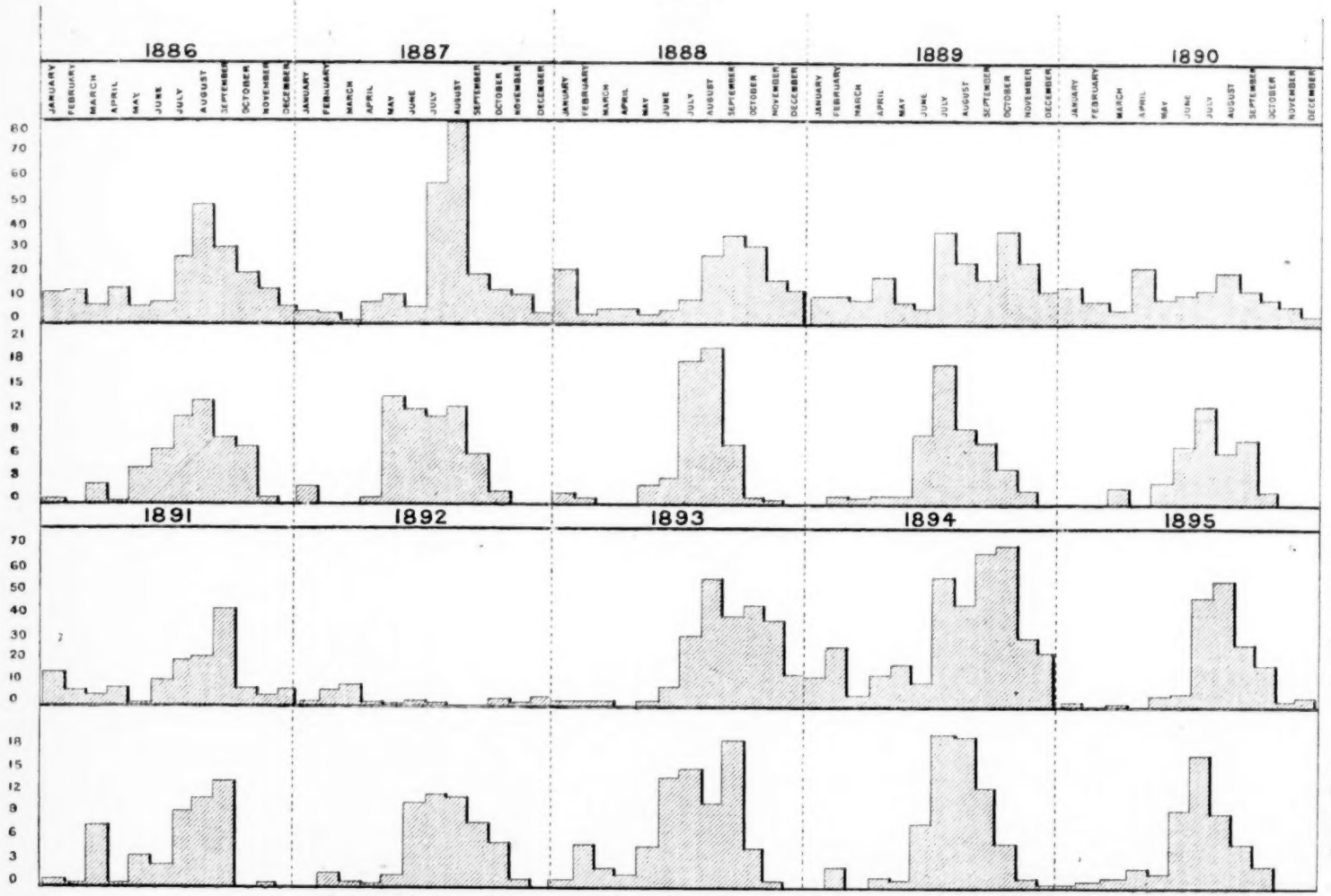


Chart illustrating the monthly fever-rate and the monthly rainfall over a series of ten consecutive years at Chota Nagpur.

three-quarters of those who had it in the early months of 1886 had suffered from it in the previous rainy season and many of them had had more than one relapse. The incidence of malarial fevers at this spot at different seasons of the year has, then, been satisfactorily explained; but before passing on to my observations in other places I must mention the important fact that at the very time that the ground-water had risen to within 5 ft. of the surface of the ground in the lines occupied by the regiment under observation it was 25 ft. down only 200 yards away and its great rise under the lines was doubtless due to the fact that there was a road along one side of the area which materially interfered with the flow of surface water from it. I have no doubt in my mind that had the lines been situated on the ground where the water always remained 25 ft. or more from the surface there would always have been as little fever among the regiment as there was in the exceptionally dry year 1892. At my suggestion it was proposed to drain the lines more efficiently, but for financial reasons it had not been carried out when I last heard from the medical officer of the station, so I cannot report the result of this measure. This fact (and I have had similar experiences in other places) is of great importance in proving how very local are the conditions which influence the occurrence of malarial fevers; but I shall discuss this point more fully after I have given another instance of it presently.

Now the instance which I have just given of the distribution of the fever in Doranda is at one extreme end of the scale—namely, that of a very dry soil accompanied by a water-level which is very low during the greater part of the year, but rises very rapidly during the rainy season. The other extreme is seen in many of the districts of lower Bengal, which form part of the great delta of the Ganges and Brahmaputra rivers. The greater part of these districts are under water during the rainy season and at this time the fever is at a minimum. When the rains have ceased, however, and the saturated ground begins to dry up again the fever season attains its maximum. Moreover, the ground-water is within a few feet of the surface throughout the year and malarial fevers prevail to a considerable extent in every month of the year, being much more evenly distributed than in Doranda and other similarly situated places. In this case of the flooded districts the maximum fever-rate occurs during the drying-up of the saturated soil, doubtless owing to the rapid evaporation of moisture from the ground carrying up the malarial organisms into the air, when they are breathed in by the inhabitants on or near the drying-up ground. Moreover, the ground-water is always sufficiently near the surface to allow of evaporation going on in the same way throughout the year, although to a less extent than just after the floods have subsided; and so fever is constantly present to a considerable extent and is never absent for long periods, as in places where the ground-water rapidly recedes at the end of the rainy season. This also accounts for the fact which I have observed—namely, that malarial cachexia is much more common in these water-logged places than in the dry ones with low water-level, because in the former frequent re-infections may take place in the same persons throughout the year, while in the latter there is little or no infection except during the four months' rainy season, and although relapses may occur they usually cease long before the next rainy season ensues and so complete recovery takes place before re-infection is likely to occur. Between the two extremes of the very dry places with a low and varying ground-water in which, I believe, infection takes place by the malarial germs being carried up by the air which is displaced by the rising ground-water, as in Doranda, on the one hand, and the water-logged and sometimes flooded regions of the Gangetic delta, where the infection takes place by the organisms being carried up into the air by evaporation of moisture from the soil, on the other hand, there are intermediate places in which both factors play a part in influencing the distribution of the fever. These places are, in fact, by far the most common and also present the most complicated problem, for it is obvious that the two factors may be present in ever-varying proportion, while the denseness or otherwise of the soil will play an important part in influencing the amount of moisture which it will retain and the rapidity and extent of the evaporation which takes place from it.

During a year which I spent in Assam investigating the epidemic malarial fever of that province, which is locally known under the name of Kala-azar, records of the variations of the ground-water were being taken for me in the different districts by the Government, while I was also able to study the incidence of malarial fevers in relation to the variations of the ground-water in the coolie lines of several tea-gardens through the kindness of Mr. Dodds Price and Mr. Lavertine, tea-garden practitioners in the Nowgong district. The data were not quite so accurate as those which I obtained in Doranda, as the exact day on which a coolie came to hospital after getting fever was to some degree dependent on his chances of making extra pay, &c. However, ample evidence was obtained to show that in those places where the water was some considerable distance from the surface before the rainy season commenced the fever rose and fell with the rises and falls of the ground-water, just as it did in Doranda, but as the water was in no case so far down to commence with in the Assam instances as in Doranda, the fever-rate increased during the first month of the rainy season, as the water quickly rose sufficiently to influence it. That this rise was due to the variations of the ground-water and not to other causes, such as changes in the temperature, &c., was proved by the fact that in one instance, in the case of two coolie lines situated only some 300 yards apart, and in other respects similarly placed, there were three rises of both the water-level and of the fever-rate in one of them, while in the same period of time there were only two rises of both in the other line.

Again, it was found that there was most fever in proportion to the number of inhabitants in those lines beneath which there was the greatest and most rapid variations of the ground-water and least in those in which it was most constant in its level. To give an example. In a certain tea-garden there were three coolie lines side by side, but separated from each other by a narrow lake between the upper and middle lines and by a deep depression between the middle and lowest line. Measurements of the water-level in the wells of each line were taken for me twice a week and the fever-rates in the three lines recorded. During the month of July a lot of rain fell and there was a corresponding rise of the ground-water and an increase in the prevalence of malarial fever. The three lines, however, differed considerably in both the amplitude of the variations in the water-level and in the number of cases of fever in proportion to the number of inhabitants of the respective lines. Thus the upper line was situated on ground which was some 10 ft. higher than the other two, which were on just the same level. In this upper line the water varied during this month from 21 ft. to 12 ft. 8 in. from the surface of the ground and the fever was less than in either of the other lines. In the lowest line it varied from 22 ft. to 8 ft. 7 in. from the surface and the fever-rate was somewhat higher than in the first line. In the middle line measurements were taken of three wells, two of which were situated within a few yards of the edge of the tank while the third was fifty yards from it. In the first two the water rose from an average of 14 ft. to one of 4 ft. 6 in., while the third varied from 15 ft. to 8 ft., clearly showing the influence of the tank in raising the level of the ground-water beneath these lines and especially of the part nearest to it. It will also be noted that the water rose nearer the surface in this line than it did in either of the others and in accordance with this the fever-rate was two-fifths greater in this line than in either of the others. On my recommendation it was decided to lower the water in this tank by some 8 ft. or 10 ft., but I have not yet heard the result of the measure, although it could hardly have been otherwise than a favourable one. This, of course, is but an instance of a well-known law, but the accuracy of the data and the very localised variation of the fever-rate in accordance with that of the water-level lend some interest to it.

It was also found that in places where the ground-water was at an intermediate distance from the surface before the onset of the rains, say, from 15 ft. to 25 ft., and the soil was a heavy one which retained a good deal of moisture, then there would first be a rise in the fever-rate with the rise of the water and a fall with the ensuing fall of the water; but if there was then a slight break in the rains and the water-level continued to fall slowly from evaporation of the ground-water, which was still only some 10 ft. or 15 ft. down, there would be another rise in the fever-rate, just as occurs when flooded ground is drying up. Here we have an instance of the two factors successively acting in the same place. Chart III. illustrates this point fairly well. It will be noticed that there were great and rapid variations in the water-level here and that corresponding with them,

Chart illustrating the monthly fever-rate and the monthly rainfall over a series of ten consecutive years at Chota Nagpur.

only often a few days later, owing to the incubation period of the fever, there were rises in the fever-rate. Further, during the break in the rains corresponding to the slow fall of the ground-water between July 21st and 31st, and again during the final steady fall at the end of the rains from Oct. 9th to Nov. 3rd there are rises of fever corresponding to the times when evaporation from the heavy moist soil would have been taking place. The irregularity at the end of the curve is partly due to the complication of relapses, which are most frequent at the latter part of the fever season. It is worthy of note that the garden on which these levels were taken is situated at the foot of some low hills and is a miniature example of the conditions which obtain in terai regions, such as the foot of the Himalaya Mountains, and I would suggest that the notorious unhealthiness of such regions is probably due to the extremely rapid and great variations in the water-level in those parts. A curious example of an apparent exception to the rule that the foot of high hills is very malarious, which I met with in Assam, lends some support to this view. In the north of the Mangaldai district, immediately at the foot of the Himalaya Mountains, are situated some tea-gardens which are remarkably free from fever. On inquiry I found that all the streams from the mountains in this place disappear at the foot of the hills into a sandy soil and appear again along a line just beyond these gardens. They evidently run into a subterranean basin, which must keep at a nearly constant level, and in one of the lines situate within this area it was found that the level of the ground-water as measured in the wells varied very little and this fact accounted for the absence of the amount of fever which might have been expected in such a terai region.

Chart IV. illustrates the ground-water and fever curves on a garden situated only some twenty miles from that of the last chart, but it presents just the opposite characters. The

CHART 3.

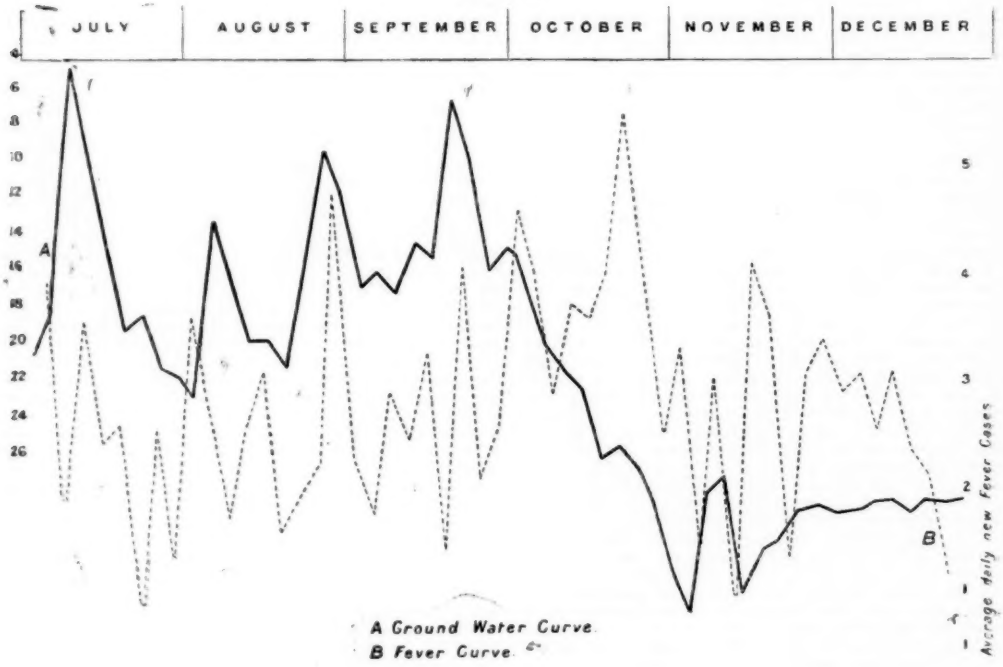
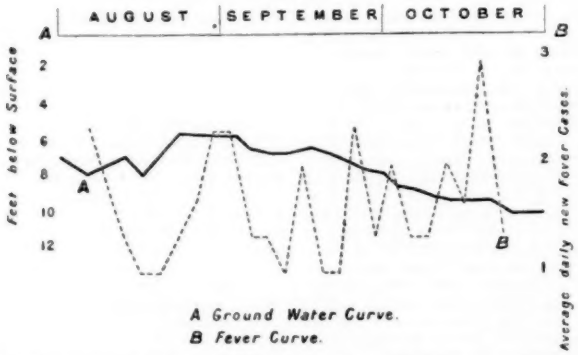


CHART 4.



Charts illustrating the relation of fever incidence (Kala-azar) to ground-water in two Assam tea-gardens.

upper line represented the water-level and it will be seen that it was remarkably constant only having varied between 5 ft. and 10 ft. from the surface. The fever also varies much less than in the previous chart and although there is a rise with the main rise of the water-level, yet the greater part of the fever occurs during the drying up at the end of the rainy season when the water is slowly sinking. Here, then, the main factor is the evaporation from the saturated soil during the drying up. In Dibrugarh, which is the most easterly part of Assam, the water-level varies between 20 ft. in the dry cold weather to 5 ft. from the surface in the middle of the rainy season, the annual rainfall averaging about 100 in. The fever increases with the rise of the water, but is also high when the soil is drying up after the rains are over, the fall of the ground-water being slow and steady at this time, both factors again coming into play at different parts of the year. In the Punjaub the fever occurs mostly after the rains, but I have no observations on the ground-water level here except in Bunnu on the frontier. In this place the water is more than 50 ft. from the surface even in the rainy season, but it must be remembered that there are no regular rains here. The whole place is, however, irrigated and fever is often seen when fields which have just been irrigated are drying up. Most of the fever occurs on the beginning of the cold weather, when there are great falls in the temperature at night, and is commonest in those who sleep out in the open air and so get chills. This is probably due to such chills coming at just the very time when the system is at its lowest daily ebb, allowing any plasmodium malariæ which may gain access to the body to successfully run the gauntlet of the white blood corpuscles.

So much for the facts that I have to bring forward. I have already mentioned that I believe that the incidence and seasonal distribution of malarial fevers in most places of India can be explained by taking into account both the rainfall and the variations of the ground-water level. Such cases as that of Doranda—in which the entire distribution of malarial fever is dependent on the organisms being carried up into the air by the piston-like action of the rapidly rising ground-water and where the factor of their being carried up by evaporation plays little if any part—only occur in places situated on a rapidly-drying and porous soil, accompanied by a ground-water which is very low for the great part of the year but varies rapidly during the rainy season. This rapid variation of the ground-water level is of great importance in explaining the occurrence of fever in dry places where there is no marshy ground. It also enters largely into the causation of fever in places with an intermediate and varying ground-water and has least influence in places with a constantly high ground-water, in which the factor of evaporation plays by far the largest part.

There are two other points which I wish to refer to which are of considerable importance both from the practical and the theoretical standpoints. They are, firstly, the strictly localised action of the variations in the ground-water level; and, secondly, the light which their discovery throws on the manner in which the infection of malarial fever takes place. Instances of the former have been given both in the case of Doranda and in that of the variations in the fever-rate in the three parallel tea-garden lines. In the first instance there was very little in the conformation of the ground to suggest the great difference in the variations of the ground-water in the areas, which were but some 200 yards apart and the surface levels of which did not differ by more than 3 ft. or 4 ft. Yet in the one spot the water rose to within 5 ft. of the surface, while in the other it remained 25 ft. down. It is well known that sites for camps and cantonments which have been selected by medical officers as the most suitable have had to be subsequently abandoned owing to their proving to be very malarious. I would suggest that before choosing between two or more apparently favourable sites, if a well were first sunk and the variations of the water-level recorded during the rainy season—or, better, for a whole year—it would be found that the one in which the water-level was lowest and varied least would prove to be the least malarious; and it is possible that large sums which have before now been spent in building barracks which have afterwards had to be abandoned on account of their unhealthiness might be saved. Again, such measurements may point to deficiency of surface drainage which was not previously apparent, as was the case in the Doranda lines and the tea-garden tank, the remedying of which might prevent much fever. Secondly, it is evident from the two instances just referred to that the infection arose from the very ground on which the houses of the regiment and of the coolies respectively were built. There is no necessity or reason to suppose that the infection was carried by mosquitoes or any other such medium. The first chart that I have shown can only be explained on the hypothesis that the rise of the ground-water displaces the air from the interstices of the soil and causes the malarial organisms which live in the earth to be carried up into the atmosphere, when they are breathed in by the persons living over the affected ground. The infection probably takes place chiefly during the night, when the powers of resistance will be lowest. In the case of drying-up ground or marsh, again, the infection will be through the air, and I am of the opinion that this mode of infection in malaria is a general one, although it is undoubtedly true that the disease may also be conveyed through water. The fact that all the water in many of the gaols of the Punjaub was for several years boiled without any diminution of the prevalence of malarial fevers also points very strongly to infection through the air being far more common than that through water, while all the facts already given point in the same direction. Any malarial organisms which may be breathed into the lungs have only a very thin layer of tissue to traverse in order to obtain access to the blood, where they live and multiply. It has recently been strongly urged, especially by Dr. Patrick Manson, that these organisms must in some way escape from the body to pass through an extra-corporeal part of their life-cycle. This is very probable, although in the case of ordinary malarial fevers it is equally possible that the germs, which are so widely distributed, may have a complete existence outside the body and are, so to speak, only facultatively parasitic.

In the case, however, of the epidemic communicable forms of malarial fever (such as I have recently shown the Assam disease, locally known as under the name of Kala-azar, to be), it is quite certain that the plasmodium malariæ must in some way escape from the body of one person and gain access to that of another, either directly through the air or—as I think is more frequently the case—after going through the soil. In this way only can be explained the manner in which a man contracts the fever while living in an infected village, and after returning to his own uninfected village while still suffering from the fever members of his household first get it and afterwards others in the village are affected. I will not dilate on this point further in this paper, as I shall be reading one on this epidemic malarial fever before the Royal Medical and Chirurgical Society very shortly, but wish to suggest a possible method of infection in malarial fevers which will explain all the facts that I am acquainted with. It is this. If malarial fever may be contracted by breathing in the malarial organisms, why should they not be also breathed out again when they have completed their work in the body? They have only to pass back again into the alveoli of the lungs and they will be able to escape from these organs more easily than they entered, for the cilia of the air passages will assist their exit. This simple theory seems to me to be much more likely than the elaborate mosquito theory, which is largely based on an analogy between such widely different constituents of the animal scale as the plasmodium malariæ and the filaria sanguinis hominis, while it is also, I think, more in consonance with the known facts as to the incidence and seasonable distribution of malarial fevers. However this may be, it is rather the more practical points of the very frequent dependence of malarial fevers on purely local and often removable variations of the ground-water level on which I chiefly wish to lay stress in this paper and I hope that the evidence I have adduced will afford material for an interesting discussion.

WESTBURY COTTAGE HOSPITAL.—A general meeting of the Westbury (Wiltshire) Diamond Jubilee Hospital Committee was held on Feb. 2nd. The financial statement showed that the subscriptions amounted to £455 and the expenditure to £451. On the motion of Lord Ludlow a hearty vote of thanks was awarded to Mr. and Mrs. Laverton, who had realised £129 from a sale of work by which the hospital was completely furnished and £20 were handed to the medical staff for purchasing necessary appliances.

THE OPEN-AIR TREATMENT OF PHTHISIS IN ENGLAND.

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(*Continued from p. 633.*)

As to selection of cases I have tried as far as possible to submit representatives of the various types of phthisis to the treatment for the purposes of investigation. It will be seen that I have not by any means restricted the trial to cases in the very earliest stages. At this point I will only say that I excluded cases that on general principles gave no promise of improvement as the subject of selection of cases for this treatment will be referred to again. I will narrate briefly some of my cases in order to illustrate the effects of the open-air treatment.

CASE 1.—The patient was a man, aged twenty-one years, who came to the Norfolk and Norwich Hospital on May 2nd, 1896. He had worked rather long hours in an office, the air of which got close towards the latter part of the day, and he had married while young and had had some anxiety as to ways and means. There was no history of heredity, but he had the tuberculous physiognomy. For five months he had suffered from cough, with occasional streaks of blood, night sweats, and wasting. On admission no definite physical signs could be detected in the chest, but the sputum contained numerous tubercle bacilli and the temperature followed the typical curve shown in the accompanying chart. It was obvious that he was losing ground and on May 9th he commenced the open-air treatment at Cromer. He soon felt himself improved in appetite and strength, but I could satisfy myself of no definite change in his condition till towards the end of July. Then the fever seemed at last inclined to give way, the pulse increased in strength, and the cough and night sweats lessened. This slight improvement coincided with the first appearance of definite signs in the chest. Now was noticed a very slight rise in pitch of the percussion note over the extreme right apex, weak breath sounds and a few fine mucous râles with inspiration. The sudden exacerbations of fever which occurred on June 8th and July 16th were accompanied by general malaise and increase of cough, but gave no objective evidence as to their cause. I looked upon them as due to toxic absorption from the pulmonary lesion. After three months' perseverance with the treatment definite improvement began and in October his evening fever, which had persisted for eight months, was subdued and I may say has not recurred. In April, 1897, the physical signs had cleared up, all symptoms had disappeared, and no tubercle bacilli were discernible in the last sputum that could be obtained. He commenced outdoor work at a country railway station and has kept quite well to this time—for a period, that is, of more than a year.

Synopsis of case.—The general symptoms of phthisis were presented, but physical signs only appeared after improvement had set in. The evening temperature usually ranged between 101° and 99·6° F. with frequent further elevations. There was decline of fever after four months' treatment, followed in another seven months by the disappearance of tubercle bacilli and of physical signs and symptoms. The duration of treatment was eight and a half months and the total gain in weight was 13¾ lb.; result, cure.

CASE 2.—The patient was a man, aged thirty-three years, who had worked in a shop for eleven hours a day. He suffered from the stuffiness of the shop and another attendant had phthisis. His father died from phthisis and also one of his four brothers. Five years previously he began losing flesh and strength and a year later cough commenced. He resigned the shop for outdoor work and got better. Three years ago he returned to shop work and since then had gradually been going downhill. He had lost 1½ st. in weight and had night sweats, anorexia, dyspnœa, and frequent troublesome cough, with about half an ounce of nummulated expectoration in the twenty-four hours. He had slight anæmia, with a pink flush on the cheeks; the voice was weak and the pulse was 112, soft and small. His evening temperature varied between 99·4° and 101° F. Tubercle bacilli were abundant in the sputum. Physical examination disclosed the existence of a large moist cavity occupying most of the upper lobe of the left lung, while at the extreme right apex there were a high-pitched percussion note, weak breath-sounds and small mucous râles accompanying inspiration. He was sent to Cromer on Nov. 9th, 1895, and carried out the treatment persistently until the end of January, 1897. During the annual closure of the home in February, 1896, he continued to live out of doors and used a folding screen as protection from the wind. This patient's strength had been greatly reduced by his prolonged illness and a very unfavourable prognosis was given by several medical men who examined him. One was encouraged, however, to persevere with the treatment by reason of the slow and gradual improvement of the appetite and especially of the pulse, which in the course of five months became notably less frequent, stronger, and fuller. As regards the signs the moist sounds in the left lung became less numerous, the local retraction more marked, and the heart's apex beat became elevated to beneath the fourth rib. The adventitious sounds lessened in the other lung, the cough and expectoration also steadily decreased, but the dyspnœa did not improve. Finally, after eleven months' treatment the temperature had gradually ceased to rise in the evening and his subsequent progress has been good and suggestive of the occurrence of arrest of his disease. Now he is able to walk slowly all day, has slight morning cough only, with a few tubercle bacilli in the sputum. Since writing the above his complaint of occasional headache and attacks of diarrhœa led me to examine the urine, which I find contains about one-twelfth albumin. His general condition is unchanged.

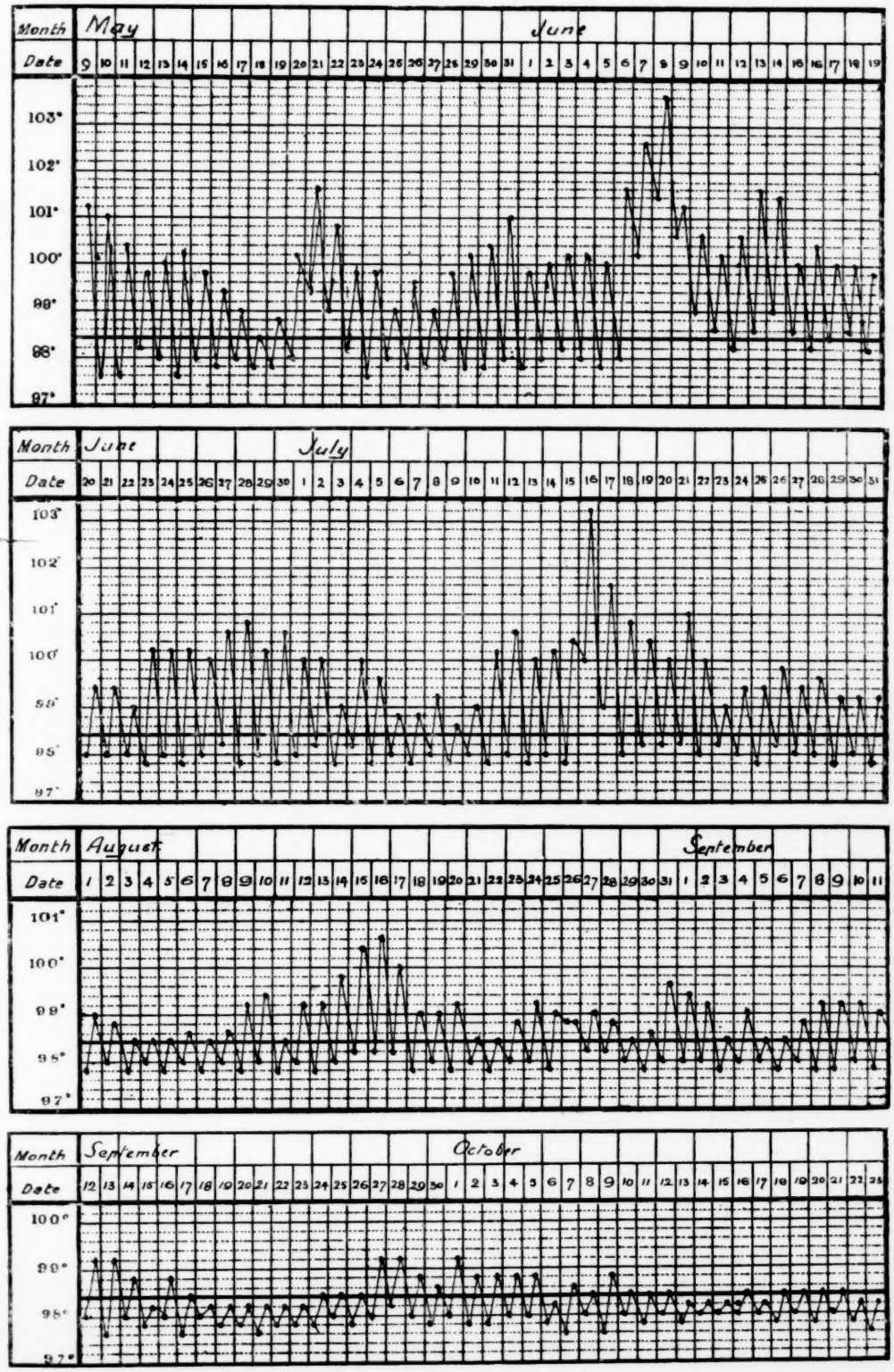
Synopsis of case.—There was phthisis of some years' interrupted duration, which had advanced to the stage of excavation of one lung and softening of deposit in the other. There was marked constitutional deterioration, with cardiac debility and persistent evening fever. Under treatment fibrotic changes in the excavated lung and drying of other lesions took place, with consequent dyspnœa, but marked improvement of the circulation and all other functions were noted. There was occurrence about a year later, however, of lardaceous disease of the kidneys. The duration of treatment was fourteen months and the gain in weight was 6½ lb.; result, improvement and partial arrest.

CASE 3.—The patient was a man, aged twenty years, who was sent to me by Dr. H. Watson as a case of early phthisis. There was no family history of the disease, but the patient had never been robust and for the last six years had worked ten and a half hours a day in a confined atmosphere with fourteen other men, two of whom were phthisical. His illness had commenced five weeks before with the coughing up of half a pint of blood; there had been two recurrences of hæmoptysis. He wasted rapidly, losing nearly a stone, and had some cough and night sweats, the pulse was 108 and weak, but the appetite and digestion were good. At the right apex the percussion note was a little raised in pitch, the breath sounds were broncho-vesicular and one or two fine crackles were heard with them. Tubercle bacilli were present in moderate numbers. He began the treatment on May 18th, 1895; his evening temperature varied between 99·8° and normal, but never indicated very active disease. Within a few weeks the cough lessened and the expectoration was reduced, ceasing altogether in five weeks, but mouthfuls of blood were lost at intervals of about a week for another three weeks. After three months' treatment the evening temperature never rose above 99°, the cough ceased and the pulse was 90 and of good strength. On Nov. 19th, 1895, his full strength had been regained, the physical signs were limited to flattening of the side, which developed during treatment, and some impairment of the breath sounds and the percussion note. He remained at home in good health for some months and then got work on a railway in South Africa, where he has kept well till the present time—for a period, that is, of more than two years.

Synopsis of case.—There were tuberculous consolidation and softening limited to a small area of one apex characterised by frequent small hæmoptyses. Cicatrisation was effected after about three months' treatment, also subsidence of slight fever and gain of strength. There was cessation of cough and expectoration. The duration of treatment was six months and the gain in weight was 7 lb.; result, cure.

CASE 4.—A lad, aged sixteen years, was also sent by Dr. H. Watson after he had been under observation for some

CHART OF CASE 1.



weeks and appeared to be losing ground. His father had died at the age of thirty-two years from phthisis. The patient suffered at eleven years of age from suppurating tuberculous glands in the neck. For a year he had been working in the close air of a printing-room and for about two months had coughed and expectorated a good deal, bringing up some half ounce of blood twice. Night sweats and slight dyspepsia were complained of and he had lost flesh rapidly. He had a tuberculous aspect and marked physical signs at the right apex; in the upper three spaces, in front and behind, there were flattening, much impairment of the percussion note, and marked tubular breathing and metallic clicks. Tubercle bacilli were found in large numbers. The patient went to Cromer on June 27th, 1896. Improvement in every particular was noticeable within three weeks of commencing the treatment. The accompanying chart shows the fall in his temperature. No adventitious sounds were heard at the end of three months and a month later the signs had cleared up in a most striking manner, leaving some flattening and softness of the breath sounds only. He is now able to work in a market-garden and feels well, but he still has a little cough in the early mornings with some expectoration in which tubercle bacilli are to be detected occasionally.

Synopsis of case.—There was pneumonic phthisis in a tuberculous subject; also massive consolidation, with moderate but persistent evening fever. Rapid general improvement occurred under treatment, which is maintained till now, eighteen months. The duration of treatment was six months and the gain in weight was 22 lb.; result, great improvement.

CASE 5.—A boy, aged ten years, the son of Case 2, had coughed, lost flesh and strength, and eaten badly for a few months. His appearance was characteristic of the tuberculous diathesis and over the upper three spaces of the left side of the chest the percussion note was deficient; the breath sounds were broncho-vesicular and were accompanied by a few reverberating râles. His evening temperature was between 99° and 100° F. During his first week at Cromer in September, 1896, his appetite was bad and the cough was constant and irritating, the ex ectoration being nummulated and swarming with tubercle bacilli. In the second week the appetite improved, he looked less ill, and the cough began to lessen. At the end of the third week the temperature had fallen and did not rise again. After four months' treatment all cough except a little in the early mornings had gone and the physical signs were much changed, the adventitious sounds having cleared up, expiration being only slightly bronchial and the affected side having distinctly fallen in. His improvement has continued to the present (eighteen months) and he is able to do light duties as an errand boy in Norwich.

Synopsis of case.—There was strong tuberculous predisposition with cavity in one apex, much asthenia, and but little evening fever. Quiescence of disease occurred, with drying and retraction of the affected lung; improvement was maintained and the patient is now able to work. The duration of treatment was four months and the gain in weight was 6 lb.; result, great improvement.

CASE 6.—The patient was a lad, aged nineteen years, who had worked with thirty other men in a fair-sized room, which, however, became hot and stuffy at times; one fellow worker has since developed phthisis. There was a history of phthisis among his mother's family and his own breakdown was attributed to an attack of influenza in March, 1895, since which he had suffered from increasing cough with much expectoration and on four occasions had small hæmorrhages. His appetite and strength were failing and he sweated every night. He was of tall, spare frame, with cold hands and a weak, rapid pulse. At the left side of the chest he had cracked-pot percussion note, cavernous breath sounds, and amphoric râles; at the extreme right apex he had slight impairment of the percussion note with broncho-vesicular breathing and râles on coughing. He had tubercle bacilli and elastic tissue in the sputum. His temperature chart offers particularly striking evidence in favour of the open-air treatment. He commenced this on April 18th, 1896, and his evening fever had disappeared towards the end of May, when private affairs compelled him to return home and abandon the treatment. The temperature rose again at once, but again was reduced by about a fortnight's treatment. After another three months he had gained nearly all his lost strength, the cough was limited to the night time and his appetite was normal. The right apex gave no definite indications of mischief and the cavity on the other side had become dry and contracted. The transition of the cracked-pot percussion note to a normal one was abrupt as one passed from the affected area to surrounding parts. His pulmonary condition has remained most satisfactory ever since—for a period, that is, of nearly two years. A year ago he developed an extensive ischio-rectal abscess, which was incised and drained and after a few weeks entirely healed. In September, 1897, Dr. Michael Foster kindly examined this patient with me and declared that he had never seen a more striking instance of arrest and limitation of disease.

Synopsis of case.—There was a large cavity in one lung and softening deposit in the other, progressing quickly in a weak youth. Subsidence of disease and some cicatrisation was effected by treatment; the interruption of treatment was followed by recrudescence and the resumption of treatment by conclusive improvement. The duration of treatment was four months and the gain in weight was 16 lb.; result, arrest and great improvement.

Without detailing the remainder of my cases the total results obtained may be expressed as follows: number of cases, 24; cured, 2; relatively cured, 4; improved, 12; only temporarily improved, 6. The average duration of the patients' stay in the home was three and a half months; the longest time any patient was allowed to remain was fourteen months. The average gain in weight made by the patients during their treatment at Cromer was 8½ lb.; the maximum gain was 22 lb., which one patient added to his weight in six months. These details are set out in the following table:—

Tabular statement including all the cases treated at Cromer.

No. of case.	Months in home.	Weeks occupied in reducing fever.	Gain in weight.	Result.
			lb.	
1	8½	18	13¼	Cure.
2	14	35	6½	Improved; quiescence of lung disease; albuminuria.
3	6	12	7	Cure.
4	6	5	22	Great improvement.
5	4	3½	6	,, ,,
6	4	3	16	,, ,,
7	3	5	14	Relative cure.
8	3	7	4	,, ,,
9	2½	4	11	Temporary marked improvement; death from dropsy and albuminuria.
10	2	No fever	8	Great improvement.
11	2	,,	12	Relative cure.
12	2½	8	7	Improvement.
13	2	8	3½	Slight temporary improvement.
14	2½	7	9¼	Improvement; death later from pneumonia.
15	4½	6	8½	Temporary improvement; death from phthisis.
16	1½	4	4	Improvement.
17	2½	3	6	,,
18	1½	No decline	1½	No improvement maintained.
19	2½	8	4	Improvement; death later from enteritis.
20	2½	4	15½	Relative cure.
21	2½	3	7	Improvement.
22	1½	No fever	5	,,
23	2½	5	9	,,
24	2	8	4	,,
Average	3½	8	8½	——

Under the heading "cured" I have placed the patients who lost entirely both all symptoms and physical signs of disease and from whose expectoration tubercle bacilli vanished. Under "relatively cured" I have included those who consider themselves quite well and who are able to earn a living, but who have some persistent physical signs,

CHART OF CASE 4.

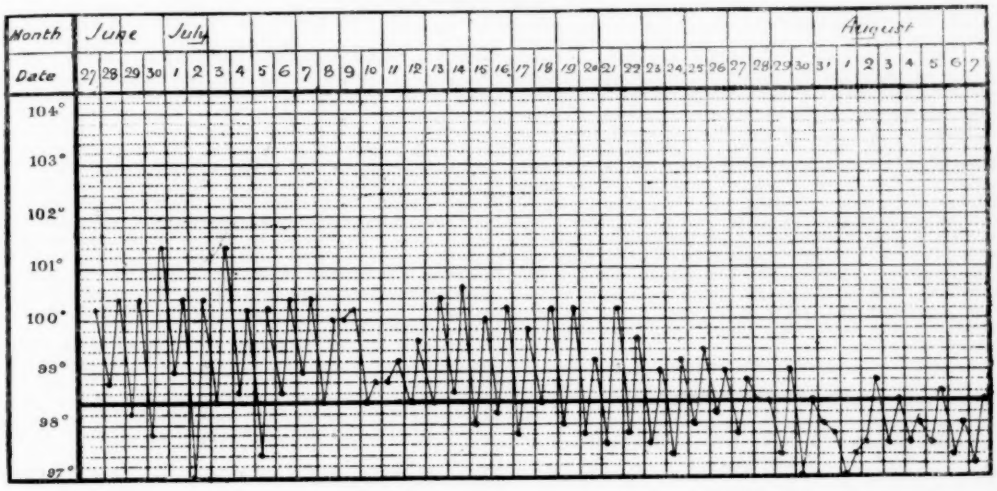
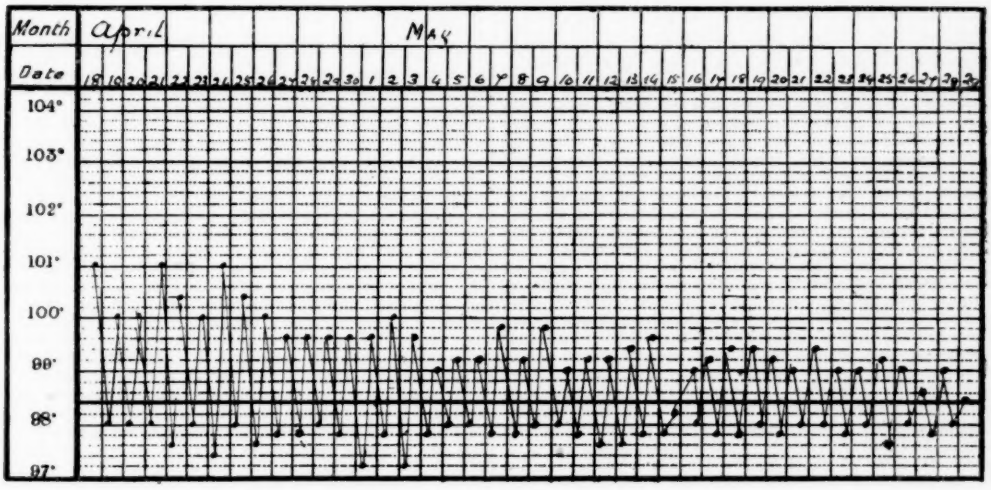
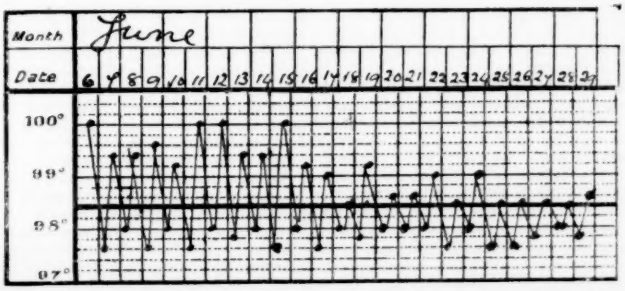


CHART OF CASE 6.





with perhaps some cough and expectoration, in which tubercle bacilli can be still detected. This is, of course, the best result that can be looked for in patients whose disease has advanced beyond the early stages. My patients have all been kept under observation since their discharge from Cromer and the maintenance of their well-being ascertained during the twelve months or more that have elapsed since the last left the home. They are all four steadily following outdoor occupations. I have placed under "improved" those patients who have lost their fever, have gained weight and strength, and manifest some diminution of their physical signs of disease. Most of them are enabled to earn their living and have maintained this improved health for various periods up to a year. This group includes those whose phthisis has become quiescent, but not before irreparable damage had been done to the circulatory and other organs. As all my cases were benefited for the time being by the open-air treatment I have reserved for the last class those whose health has failed again during the one or two years succeeding their discharge from the home. Four of these have died—one from albuminuria, one from acute pneumonia, one from tuberculous enteritis, and the fourth from phthisis alone.

(To be continued.)

THE VITALITY OF THE DIPHTHERIA BACILLUS.

BY ALEXANDER MACGREGOR, M.D. ABERD., M.R.C.P. LOND.,

ASSISTANT PHYSICIAN TO THE NORTH LONDON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.

IN the Report on the Etiology and Prevention of Diphtheria presented by Löffler on behalf of the German Committee to the Eighth International Congress of Hygiene and Demography it is stated that the patient "is infectious so long as he has bacilli upon the mucous membrane. The bacilli usually disappear with or soon after the disappearance of the local signs, but they may be detected still lively and virulent in the passages or nose for weeks and even months." My attention was specially directed to this subject by a case which came under my care last September. The patient was a boy suffering from the sequelæ of diphtheria. I shall give his case in detail presently, but I may here mention that I found Löffler's bacillus present in the throat and virulent nearly six months after the attack of diphtheria. On looking into the literature of the subject I find that Schäfer[1] records a case where mucus from a boy's throat "examined seven and a half months after the attack gave numerous colonies in serum cultivations and proved virulent by inoculation of animals." Tobiesen[2] found diphtheria bacilli in the throats of 24 out of 46 patients at the time of their discharge from the hospital, and in 19 of the 24 cases the bacilli proved virulent. Bigg says:[3] "In 245 cases of these 405 cases (of true diphtheria examined in three months) the diphtheria bacilli disappeared within three days after the complete separation of the false membrane; in 160 cases the diphtheria bacilli persisted for a longer time—namely, in 103 cases for seven days, in 34 cases for twelve days, in 16 cases for fifteen days, in 4 for three weeks, and in 3 for five weeks after the time when the exudation had completely disappeared from the upper passages." In the report of the German committee already quoted it is laid down that "convalescents from diphtheria must not mix freely with others (or children go to school) till bacteriological investigation has proved the removal of the bacilli."

In the light of those facts bacteriological investigation in the case of convalescents from diphtheria would seem to be a step in preventive medicine which would recommend itself to everyone; but in this country at any rate it is rarely, if ever, systematically carried out. Bacteriological examination with a view to correct diagnosis, and in cases of true diphtheria to decide when there is no longer infection after the disappearance of the usual local signs, would do much to prevent outbreaks of diphtheria or to make the disease less epidemic when it did break out. Much has been done and not a little remains to be done in the working out of the morphology and biology of the diphtheria bacillus. The typical bacillus varies considerably in form and in its staining and its virulence according to its age and to a marked degree according to the medium upon which it is grown, and authorities are not agreed as to what ought really to be called the pseudo-bacillus. Dr. Hewlett and Dr. Edith Knight, in their very valuable contribution to the subject,[4] make the important statement that they were sometimes able to convert the non-virulent pseudo-diphtheria bacillus into a virulent Klebs-Löffler bacillus; and they say that by carefully heating it has apparently been possible to convert a typical virulent Klebs-Löffler into a typical non-virulent pseudo-bacillus. M. Louis Martin says[5] that the pseudo-bacillus can give rise to severe diphtheria if associated with streptococci. Dr. Hewlett and Dr. Edith Knight also state, and this seems to me very important, that "in a number of cultures it is possible to obtain a series of organisms which form a connecting chain between the Klebs Löffler and the pseudo." This was well seen in the cultures made from the throat of my patient.

The condition of the tissues or secretions which renders an individual susceptible to an attack of diphtheria and the conditions which determine the degree of virulence in different attacks have yet to be discovered. Madsen,[6] after numerous and very thorough experiments, found that an acid culture is not toxic in the doses usually employed and that the production of toxin in it continues only for four or five days, because at the end of that time the growth of the diphtheria bacillus ceases and the toxin is gradually destroyed by the acid fluid. He found all grades of toxicity in alkaline cultures, but the degree of toxicity was not always proportionate to the degree of alkalinity. Very faintly alkaline cultures could be as strongly toxic as those which were strongly alkaline and a high degree of alkalinity is no proof that a culture is highly toxic. He also found that the degree of toxicity varied in cultures of the same bacillus in different broths. What determines the toxicity in these or in the individual attacked is not known. M. Louis Martin holds that the prognosis in diphtheria depends upon the association of the diphtheria bacillus with other micro-organisms. The prognosis, he says, is grave when streptococci and staphylococci are present.

The case in which I found the bacilli present and virulent nearly six months after the attack of diphtheria was that of a boy, aged eight years. He came under my care on Sept. 28th, 1897. He then complained of weakness, especially of the lower limbs. The knee-jerks were absent, the apex beat of the heart was in the nipple line, præcordial dulness was increased, the heart's action was regular and the sounds were normal, the urine contained albumin, and there was a history of an attack of diphtheria in the preceding July with subsequent difficulty in articulation and in swallowing. The boy was evidently suffering from the sequelæ of diphtheria. Strychnine and iron were given, but it was not till the end of November that the albumin disappeared and at that date the knee-jerks were still absent. On Nov. 30th I inoculated a tube of serum with a platinum loop drawn firmly over the tonsil. The tube was put into an incubator on the following day and in twenty-four hours numerous colonies had grown and to the unaided eye several of them looked like diphtheria. Microscopic examination showed those to consist of diphtheria bacilli mixed up with other micro-organisms. From one of the colonies a culture was made in broth on Dec. 2nd and on Dec. 4th this new culture was found to contain diphtheria bacilli in large numbers. A cover-glass preparation made on Dec. 20th from the same culture proved to be a specimen of a practically pure culture of the diphtheria bacillus. At the same time a fresh culture in broth from it was made and on Dec. 23rd at five o'clock in the afternoon 0·5 c.c. of the fresh culture was injected into a guinea-pig. A cover-glass preparation of the culture made and examined at the same time showed that as well as diphtheria bacilli streptococci were also present. The guinea-pig was found dead early in the morning of Dec. 25th and post-mortem examination showed typical local infiltration at the site of the injection, enlargement of the spleen, and the usual congestion of the supra renal bodies. The liver was

[1] Brit. Med. Jour., 1895, vol. i., p. 61.
[2] Centralblatt für Bakteriologie, 1892, vol. xii., p. 587.
[3] Medical Record, New York, Sept. 15th, 1894, p. 321.
[4] Transactions of the British Institute of Preventive Medicine, 1897.
[5] Diagnostic Bactériologique de Diphthérie, Paris, 1894.
[6] Zur Biologie des Diphtherie-bacillus: Zeitschrift für Hygiene, 1897, vol. xxvi., p. 157.

studded with minute so-called pseudo-tuberculous nodules. Two tubes of glycerine-agar were inoculated direct from the boy's throat on Dec. 28th. A cover-glass preparation from a colony in one of the tubes showed an almost pure culture of the diphtheria bacillus; a preparation from the second tube was found to consist of diplococci and streptococci. It is possible that the virulence of the culture injected was increased by the presence of the streptococci and perhaps by the pseudo-tuberculosis of the liver; but Dr. Bulloch, bacteriologist to the London Hospital, who injected the guinea-pig for me, said that the post-mortem appearances were typical of death from diphtheria and that alone.

As regards the progress of the boy's case I may mention that the right knee-jerk returned about the middle of December. On Jan. 11th it was noted that both knee-jerks were active and that the boy felt well and strong. He was not seen again.

To Dr. Bulloch my warmest thanks are due for his kind help. In his laboratory at the London Hospital Medical School I was able to carry out the bacteriological investigation and, as I have already stated, the experimental inoculation of the guinea-pig was performed by him.

Harley-street, W.

AN EXTRAORDINARILY ACUTE CASE OF GRAVES'S DISEASE.

By E. HARVEY SUTCLIFF, M.B. DURH., M.R.C.S. ENG., L.R.C.P. LOND.

THE patient, a woman, aged thirty-three years, was taken ill in October, 1897, complaining of a tumour in the neck, breathlessness, and general debility. Her father is alive and healthy; her mother died at the age of sixty-five years from cancer of the œsophagus; one sister is suffering from very severe lateral curvature of the spine. Until about five years ago, the time of her marriage, she had always been quite strong and healthy. Her first confinement was difficult and the child was delivered by forceps. She had two confinements subsequently, both of which were more or less prolonged, and since the birth of these children she had not been in robust health. About three months ago she first noticed an enlargement in her neck and about the same time her friends informed her that her eyes were more prominent than usual. She consulted a medical man, who told her she was suffering from exophthalmic goitre. Owing to change of residence she came under my care about one month ago, the disease having evidently made rapid strides in the meantime. She was then greatly emaciated and showed the ordinary signs of Graves's disease. The tumour was of moderate size; it presented visible pulsation to the eye and a distinct thrill to the examining hand. The eyes were prominent, but not to a marked degree, and she could close her eyelids completely. Von Graefe's sign was present. The pulse was thready, 160, and regular. A loud systolic bruit was heard over the thyroid gland. The heart was slightly enlarged and a systolic murmur was heard at the apex beat. Nothing abnormal was detected in the lungs and as far as I could determine there was no enlargement of the thymus. The temperature was normal. The urine was acid, specific gravity 1023, and contained no albumin. At the time I first saw her she was suffering from persistent vomiting which continued in spite of all treatment until her death. For three weeks she took no food of any kind with the exception of one small cup of milk which I gave her myself and which she vomited a few minutes afterwards. I first treated her with large doses of digitalis combined with bromide of potassium, but as she failed to keep it down it was replaced by small doses of morphia taken every hour and digitalis tabloids. In spite of several changes in her medicine the vomiting persisted without interruption. Even the sight of food would bring on the most distressing attack of retching which continued until a small amount of mucus was expelled. So fearful, indeed, were these attacks that at last she would not attempt to take anything with the exception of a little water which she sipped occasionally, and she repeatedly entreated us not to bother her with food but to allow her to die in peace. Each day she became more emaciated. Rectal feeding was suggested but was not received with favour either by the patient or her friends. At this stage her pulse reached over 200 a minute. She developed a troublesome and painful cough. The muscles of the pharynx and larynx became paralysed, so that what little water she took immediately choked her, and her voice became altered, weak, and nasal in tone. The urine and fæces were scanty and offensive. Slight jaundice was present. Finally, after having become reduced almost to a skeleton, she died, still retaining her senses until the end although there was some slight delirium at night. In this case the disease ran an unusually rapid course, as my patient lived just three months after the symptoms first made themselves apparent.

Torrington, Devonshire.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF PRIMARY SCIRRHOUS CARCINOMA IN THE AXILLA.

By HERBERT SNOW, M.D. LOND.,
SURGEON TO THE CANCER HOSPITAL, BROMPTON.

A WOMAN, aged forty-seven years, who had had four children, consulted me in October last with regard to a hard nodular mass, occupying the whole of the right axilla, of one and a half years' duration. It implicated the skin extensively but was otherwise mobile. The breast appeared to be perfectly healthy. I excised the growth with its skin-covering by oval incisions from the apex to the lower border of the axilla, carefully removing all the connective tissue together with some enlarged glands below the clavicle. The axillary vein was enveloped by a ring of carcinoma tissue, and rather more than an inch had to be resected. The mamma was then removed by incisions at right angles to the first. The patient made an excellent recovery. As was anticipated the tumour proved to be scirrhous, and the disease was passing down to the mamma along the usual isthmus of breast tissue, the normal direction of the infiltration being thus reversed.

I think that such cases as the one published above are sufficiently exceptional to be worth recording, especially as an important point of practice hangs thereon. The breast seems so healthy and so far from the growth that an operator ignorant of their true pathology will not remove it—an error I committed in the last case I met with about seven years ago. A thin strip of mammary parenchyma is normally prolonged around the edge of the pectoralis major to its under surface. Carcinoma beginning here adheres to the skin and grows to a large size, while the breast seems free, yet at operation we always find the continuity above described and the infiltration gradually extends downwards. I am convinced that it is wrong to ascribe the occurrence to an isolated lobule, a supernumerary mamma in fact, within the axilla; there is always a continuous tract of mammary tissue, in some women of course more apparent than in others. Unless we excise the whole of this recurrence is a matter of course.

Gloucester-place, W.

TEA AMBLYOPIA.[1]

By E. KENNETH CAMPBELL, M.B. EDIN., F.R.C.S. ENG.,
SENIOR ASSISTANT SURGEON TO THE WESTERN OPHTHALMIC HOSPITAL, LONDON.

THOUGH various kinds of toxic amblyopias are recognised, yet with the exception of those due to tobacco and alcohol the affection is rarely met with, and it is for this reason that I deem the following interesting as a contribution to the literature of the subject.

A man, forty-six years of age, had always had very good eyesight up to about September, 1895, since which time it had gradually been failing. On March 2nd, 1896, the vision

[1] Extract from a paper contributed to the Twelfth International Medical Congress held at Moscow in 1897.

in both eyes was $\frac{5}{60}$ and was not improved by glasses. The media were quite clear and the fundus of both eyes was absolutely healthy in appearance. The employment of retinoscopy demonstrated a small amount of hypermetropia (about + 50 D.), the fields of vision were normal to "white," but there were partial central scotomata for "red." When I say "partial" I mean to signify the fact that the patient hesitated some time before pronouncing this particular colour to be "red." He was a strong and healthy-looking man and had always led a very regular, methodical, and temperate life. There was no organic disease. He was in the habit of smoking about three pipes of shag a day, one after each meal, and usually drank but one glass of beer in the twenty-four hours, generally after dinner. I ordered him to give up beer and tobacco and prescribed five minims of tincture of nux vomica to be taken three times a day. I continued to see him once a week regularly for a period of two months, at the expiration of which time the eyesight had not improved. He looked very miserable and earnestly craved permission to resume his smoking as he suffered acutely from being deprived of it. I consented, but limited him to one pipe a day. I saw him again on April 6th and as the vision had made no improvement whatever (being still $\frac{5}{60}$ in both eyes) I made further inquiries into his history and elicited the fact that for years past he had been in the habit of drinking large quantities of strong (and cheap) tea, his daily consumption being on an average twelve large cupfuls. I told him to abandon this tea-drinking entirely, but allowed him to resume his tobacco and beer in the quantities to which he had formerly been accustomed, as I judged that he could not otherwise have tolerated the deprivation of the tea. The result was remarkable and significant, for from that moment the vision gradually and steadily improved. On June 4th the vision in both eyes was $\frac{6}{36}$; on July 2nd it was $\frac{6}{18}$; and on Sept. 24th (over four months after abandoning the tea) it had improved to $\frac{6}{9}$ and the field of vision had become quite normal.

Wimpole-street, W.

NOTES OF A CASE OF COCAINE POISONING.

BY H. B. PALMER, L.R.C.P. AND S. EDIN.

COCAINE poisoning may not be so rare as we are led to infer from the paucity of references to it in our ordinary text-books, yet I believe the following case will be of interest to some of my fellow practitioners.

The patient was a robust man, about forty years of age, who in mistake for caffeine took ten grains of hydrochlorate of cocaine with ten grains of bromide of ammonium for a sick headache. The poison was taken on a full stomach about two hours after dinner. Within five minutes of taking the drug the patient expressed himself as feeling wonderfully well. Half an hour afterwards I was called to see him as he felt, as he expressed it, "very funny." He complained that his hands and feet were numb and that he felt as if he were walking on cotton-wool. This was followed by spasmodic jerkings of the limbs, preceded by a sense of restraint. His jaw troubled him by "rattling," as he put it, and his mouth to him appeared to be dry. In reality it was anæsthetised. The eyeballs were notably protuberant and perfectly immobile, evidently from paralysis of the motor oculi muscles. The levatores palpebrarum were unaffected. The pupils were fixed in the state of semi-dilation. The facial expression as a whole was very haggard. Whilst he was in this state I administered to him three drachms of vinum ipecacuanhæ with warm water and he vomited immediately. About forty minutes after the ingestion of the poison the speech—at all times intelligent—became quick and hurried and the breathing very oppressed. This oppression was principally expiratory and gradually increased until the rate sank to about 8 per minute but there was no cyanosis, however, possibly from the fact that the pulse had increased in rapidity to 120 beats per minute and was full and bounding. As the breathing became worse I administered a hypodermic injection of strychnine, $\frac{1}{30}$ gr., and digitalin, $\frac{1}{120}$ gr. The effect was immediate; the respiration became relieved although the pulse-rate remained as before, and from this time the danger of the case seemed less imminent. The breathing at times became laboured, but never again to the extent it had reached prior to the administration of the antidote. The subsequent history of the case was one of gradual improvement, which I believe was aided by the patient taking cupfuls of hot, strong coffee which was comforting and seemed to stimulate the respiratory apparatus. About two hours from the ingestion of the poison the patient again commenced to vomit and passed large quantities of urine, whether from the poison or treatment I cannot say—possibly both. Urination was performed without difficulty, but there seemed to be an inappreciation of relief natural to the removal of the tension of a full bladder. Perspiration throughout was very free. The knee-jerks were not absent but appeared to be defective. The total duration of the symptoms was about seven or eight hours. The next day the patient though languid was fit for duty.

If there is anything to be learned from the case it is the selective property of cocaine: first the nerves to the motor oculi muscles were affected, secondly the vagus, and after this the nerves to the mucous surfaces and skin. It is possible that the instillation of the drug into the eye may be of value in those troublesome cases of idiopathic nystagmus we come upon in general practice, although I have not heard of such treatment. If the case had terminated fatally the breathing would have failed first and indeed I had prepared to resort to artificial respiration. I cannot speak too highly of the action of the digitalin and strychnine in this case.

Plymouth.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

MIDDLESEX HOSPITAL.

A CASE OF SPURIOUS HERMAPHRODITISM (HYPOSPADIAS AND UNDESCENDED TESTES IN A SUBJECT WHO HAD BEEN BROUGHT UP AS A FEMALE AND BEEN MARRIED FOR SIXTEEN YEARS).

(Under the care of Mr. ANDREW CLARK.)

CASES of spurious hermaphroditism are probably by no means so rare as is often thought, for hypospadias with retained testes gives rise to a condition which is extremely like the female external genitals, and as a consequence these males have frequently been mistaken for females. From the statistics of the French military revising councils 0·5 per cent. of the rejected recruits suffered from this malformation.[1] It is very difficult to offer any explanation of the occurrence of "menstruation" in Mr. Clark's patient. The case is remarkable in many respects and is well worthy of being put on record.

A woman, forty-two years of age, was recently admitted into Bird Ward on account of a painful swelling in the left groin. She stated that a fortnight previously she was lifting some heavy furniture when something seemed to give way in her stomach, she felt very sick and had an acute pain in her left groin; on feeling the groin she found a tender swelling there; when she lay down it got smaller, but on her again rising the swelling regained its former size. The severe pain did not last long and she was able to follow her occupation, but she was always in more or less pain and discomfort and the swelling seemed to be slowly enlarging, so at the end of a fortnight she deemed it advisable to seek medical advice and went to the hospital. The notes state that on admission she was well nourished and of somewhat masculine appearance. The thyroid cartilage was prominent, she had large hands, and the breasts were well developed but the nipples were rudimentary and the areolæ were not marked. There was no hair on the face and there was but little on the pubes. An ovoid solid body feeling just

[1] Lagneau: Le Bulletin Médical, April, 1896.

like a testicle rather above the usual size occupied the left inguinal canal. There was no impulse on coughing, it was dull on percussion, very tender to the touch, and not reducible into the abdominal cavity. A similar but smaller swelling was observed in the right groin; this was not tender and the patient was not aware of its existence until her attention was called to it. The external genitals were normal in appearance and the vagina was of normal calibre and length, but the finger introduced into the canal demonstrated a *cul-de-sac*. No os or cervix uteri could be felt and a bimanual examination failed to detect the presence of a uterus. The patient had been married for sixteen years and her husband had died within the last year; she had never been pregnant and neither she nor her husband had any idea that she was in any way different from other women. She began to menstruate at the age of twelve years, at first not very regularly, but from fifteen to thirty-eight years of age she never missed the catamenial flow every four weeks and it always continued for twenty-four hours and no longer; in the interval she had a constant white discharge. There is nothing to note regarding her family or previous history beyond the fact that her mother had told her that when very young she wore a truss for some time on account of a rupture, but she herself did not remember anything about it. The diagnosis lay between hernia of the ovary and partially descended testicles, for although the patient had lived as a woman and according to her statement menstruated regularly Mr. Andrew Clark could not put from his mind the idea that these bodies were testicles. There were no urgent symptoms and she said she expected her menses shortly, so she was kept under observation for about a fortnight, but as during this period there was absolutely no change in her condition and there was no sign of the menses appearing there seemed to be no reason for waiting any longer before operating. Accordingly the patient was placed under ether and an incision two and a half inches long was made over the left swelling, the sac was opened and what were to all appearances an ordinary testicle and spermatic cord were drawn out of the wound. The cord was transfixed and ligatured with stout silk and the testicle was removed; there was some little delay on account of bleeding from the stump owing to the silk having broken in the act of tying, but the hæmorrhage was soon checked; the stump was then sewn to the ring and the ring was closed by means of silk ligatures. The wound was then sutured and a collodion scab was applied. Exactly the same operation was performed on the other side, but here there was no trouble from hæmorrhage. This wound was also closed with a collodion scab. After the patient was taken back to bed she fell into a profound state of collapse and for some time her condition caused considerable anxiety, as, though she seemed to be suffering from shock rather than hæmorrhage and though she had not really lost much blood during the operation, the possibility of the ligature having given way again on the left side was present to Mr. Clark's mind. In the course of an hour, however, she began to rally and by the next day she had quite recovered. There is no need to follow the subsequent details of the case and it may merely be added that on the eighth day the stitches were removed and the patient made an uninterrupted recovery. She was left on her back for a month and then quitted the hospital quite well.

Remarks by Mr. ANDREW CLARK.—I would first remark that there was no doubt about the nature of the organs removed. They have been carefully examined and both were in structure identical with the testicle; no spermatozoa were, however, found. I have called the patient "she," though as far as we were aware she had none of the essential generative organs of the female, but having always lived as a woman I did not think it necessary or even fair to inform her of what we had discovered, and when she left the hospital she believed, as far as I am aware, that she had been suffering from an ordinary rupture which had been cured. There are many cases of hernia of the ovary on record and in the account given of some the suggestion of the supposed ovary being a testicle is made and there are some in which when the bodies have been removed they have proved to be testicles; but in all these cases, as far as I know, the individuals have not menstruated, been married, and lived to the age of forty-two years in ignorance of their condition. There was no evidence that this person was a hermaphrodite, there was no uterus, at any rate not large enough to be felt, and there was no evidence of ovaries. I cannot account for the regular menstruation, but I am inclined to take the statement regarding that *cum grano salis*, for there was absolutely no opening to the vaginal tube. I consider that the patient was really a man with a very ill-developed penis in a condition of hypospadias.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.

A CASE OF TRAUMATIC RUPTURE OF THE LIVER; FORMATION OF CYSTIC SWELLING CONTAINING BILE-STAINED FLUID; INCISION AND DRAINAGE; RECOVERY.

(Under the care of Mr. C. WHIPPLE.)

WE are not aware that any case closely resembling the one reported below has been hitherto recorded. It seems probable that a bile-duct was torn across at the time of the injury and that bile had collected underneath the peritoneum covering the liver and had subsequently separated the layers of the falciform ligament. Mr. Whipple is to be congratulated on the successful termination of the case.

A boy, aged sixteen years, was admitted into the South Devon and East Cornwall Hospital, Plymouth, on Jan. 6th, 1898, for an abdominal tumour. The history was given that four weeks previously he was kicked in the abdomen by a horse; he suffered from pain directly after the kick, but not much subsequently. He was put to bed and kept there. The next day he vomited; no record of the colour or amount of the vomited matter was kept. About a week after the accident there was noticed to be an abdominal swelling; this gradually increased in size up to the time of his admission. He was a thin anæmic boy with a pinched expression and somewhat quickened respiration. The upper part of the abdomen contained a large fluctuating tumour occupying the epigastric region and parts of the hypochondriac, lumbar and umbilical regions. The tumour was dull on percussion, not painful or tender on palpation and appeared to be about 8 in. in diameter. On Jan. 8th an incision was made in the linea alba above the umbilicus and on opening the peritoneal cavity the wall of the tumour presented at the wound. An exploring syringe drew off some thin, clear, yellowish fluid. The cyst was then tapped with a Spencer Wells trocar and cannula and about two pints of fluid were evacuated. The cyst was found to have extended deeply down towards the transverse fissure of the liver in one direction and towards the umbilicus to have separated widely the layers of the suspensory ligament of the liver. Its cavity was wiped fairly dry with sterilised swabs on holders and in doing this some ochrey fibrinous material was brought away from its walls. The lower part of the abdominal wound was closed and the cyst wall was attached with interrupted sutures of fishing gut to the upper part of the skin edge of the wound. A large-sized drainage tube some seven inches in length was pushed to the bottom of the cyst cavity and iodoform gauze was packed round this, a thin strip being inserted into the tube itself. A copious dry dressing was applied. Examination of the fluid showed that it owed its colour to the presence of bile pigment. On Jan. 9th the temperature at 10 A.M. was 102° F., the pulse was 120, and the respirations were 28. The dressings were soaked with bile-stained fluid and accordingly they were changed. On the 11th the temperature was 99·4°, the pulse was 98, and the respirations were 28, and on the 12th they were 98·2°, 86, and 24 respectively. On the 13th the large drainage tube was removed and one of smaller size was inserted to the bottom of the cavity. From this date until the 18th the wound required dressing every day, but after that date the discharge of fluid became progressively smaller. On Feb. 12th the drainage-tube was removed and on the 18th the boy was discharged from the hospital, the wound being entirely cicatrised except at the upper part; he looked fat and well. The liver dulness was normal.

Remark by Mr. WHIPPLE.—The case seems to be a most unusual one, a search through the principal surgical works revealing none of a similar nature.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Family Lateral Sclerosis.—Microcephaly and its Surgical Treatment.—Removal of the Entire Upper Extremity for Recurrent Carcinoma after Removal of the Breast.

A MEETING of this society was held on March 8th, the President, Mr. BRYANT, being in the chair.

The PRESIDENT, in taking the chair for the first time, thanked the Fellows for the honour done him, regarding the position as second only to the Presidency of the Royal College of Surgeons of England. He felt especial pleasure in being called to preside over the society as a Guy's Hospital man, for he reminded the Fellows that the society was founded by a Guy's physician, Dr. Saunders, in 1805, and many Guy's men had followed him in the chair, including Bright and Addison. But there had recently been a break, no surgeon from his school having occupied the chair since Sir Astley Cooper and no physician since Dr. Babington in 1861. It therefore gave him great pleasure to renew the connexion between the school to which he was so deeply attached and the society.

Dr. NORMAN MOORE showed two brothers, aged twenty-four and twenty-six years, suffering from a family form of Lateral Sclerosis. Both showed well-marked signs of lateral sclerosis, there being spastic paraplegia, with increased reflexes, but no affection of sensation or of the sphincters. The arms were unaffected and there were no nystagmus, ocular paralysis, or any defect of vision. The speech was slow and drawling. Intelligence was unimpaired. The symptoms had come on gradually after the age of fifteen years, and a sister who was now fifteen years of age had the same affection of speech although there was no paraplegia at present.

Mr. JOSEPH GRIFFITHS read a paper on Microcephaly and its Surgical Treatment. After making general remarks upon the nature of congenital microcephaly Mr. Griffiths divided the cases into two main classes: (1) those with small ill-filled but not deformed skulls; and (2) those with small and deformed skulls. The first class included those cases in which the brain was arrested in its growth in early embryonic life (from three to four months) and in which the skull was natural, small, and diminutive, the smallness being the result of a proportional diminution in all directions. In the second class the skull was not only small, but misshapen, and the brain was not only diminutive, but diseased, the disease giving rise to the alteration in shape and the skull merely conforming itself to the enclosed brain. In the specimen shown by Mr. Griffiths the skull showed no evidence of disease or of premature synostosis of its component parts. The case illustrated the characters of Class 2. The patient was a well-formed boy, aged sixteen months; his head was very small, measuring only 16¾ in. in its greatest circumference, and it was flattened from behind forwards, the hinder part being flush with the back of the neck. From front to back the head measured only 5½ in. and from side to side 4½ in., which was near the normal. He could not speak nor could he sit owing to muscular rigidity of the lower limbs; this rigidity was also present, but to a less extent, in the upper limbs. Intelligence was very small. He was the firstborn of young, healthy parents, the father and mother being twenty-four and eighteen years of age respectively; forceps were used and chloroform was administered at the birth. When nine months old he suffered from fits for three days, being unconscious throughout one day and a night. On Dec. 29th, 1896, linear craniectomy was performed on the right side, the idea being to make an artificial lambdoid suture. Recovery was uneventful and complete and the operation was followed by marked diminution in the rigidity of the muscles of both upper and lower limbs; the boy became interested in all around him and for the first time in his life showed a desire to play with toys. On Jan. 12th, 1897, the opposite half of the artificial lambdoid suture was made. Infection of the wound followed and septic meningitis supervened and caused death in five days. At the necropsy the brain was not only ill-developed, but it showed signs of disease affecting the cerebrum in more or less symmetrical patches. The skull was deformed, but not from any disease or synostosis of its component parts, but merely from want of the natural stimulus that the enlarging brain gives to it. A summary and statistics of cases operated upon were given, with a list of the published cases operated upon in this country. The conclusions were the following: (1) congenital microcephalic idiots may be divided into two main classes: (*a*) those with small ill-filled but not deformed skulls, and (*b*) those with small and deformed skulls; (2) in Class *a* the brain is at fault, being arrested in its development in an early period of embryonic life, and in Class *b* there is in addition to arrested development of the brain evident disease of the cortex distributed in patches more or less symmetrically, the deformity of the skull being determined by the shape of the brain; (3) there is a hypothetical case in which the skull is prematurely synostosed and the enclosed brain more or less normal, but hitherto no evidence has been brought forward to show that such cases actually occur; (4) craniectomy in all but the last-named (hypothetical) cases can be productive of no permanent good, as the original fault is in the cerebrum (or of the whole nervous system according to Giacomini) and not in the skull; (5) where, however, there are symptoms, such as general rigidity of the limbs, &c., which are in all probability due to irritation of the motor cortical centres, then operative interference (trephining and craniectomy) is likely, not only to afford amelioration of the symptoms, but in some cases to lead to a substantial and even permanent improvement; and (6) hitherto the mortality from operations has been very high, but with experience it is likely that this will be materially reduced. — Mr. WARRINGTON HAWARD remarked that the necropsy showed the condition in Mr. Griffiths's case to be due to the condition of the brain and not to that of the skull. He agreed with the conclusions of Mr. Griffiths enumerated above with the exception of the fifth, which appeared to him to be in direct contradiction to the previous ones. If the development of the brain had been already arrested it was difficult to see how making holes in the skull would relieve the condition. Cranial surgery had made great advances and it would be a pity if it were to be discredited by attempting the impossible. He hoped that the paper would not be misunderstood as yielding facts in favour of operative interference.—Mr. E. COTTERELL said that he had already published one case in which he had operated with striking benefit on a child, aged nineteen months, who presented the typical features of microcephaly. He was now well and able to go to school with other children. In other cases he had operated on, although the improvement had not been so striking, there had been definite amelioration, especially as regards the number of fits. He did not think that a simple trephine hole was sufficient. He made a cut through the parietal bone, going almost all round it, and then raised the large flap of bone for a little distance from the brain. The immediate results were very good, the wound healing in ten days. In his last case in order to thoroughly relieve pressure he had also opened the dura mater. He had not met with the hyperpyrexia which had been described by other operators.—Mr. STANLEY BOYD said that he had only operated on one case, that of a child between two and three years of age. Before the operation the child was in a position of flexor rigidity and constantly crying. He turned down a large flap and quickly cut through the side of the skull from the middle line in front to a little distance from the middle line in the occipital region. A fortnight later he made a similar incision through the bone on the other side, uniting the cuts in front, but leaving a small hinge of bone behind near the posterior part of the longitudinal sinus. The whole skull-cap could then be raised from the brain, being secured only by the hinge behind. The bone, especially in the parietal region, was thickened. Each operation only occupied about twenty minutes. There was little if any improvement in intelligence. The rigidity was somewhat less, and instead of being flexor became extensor in character. When the child was seen some months afterwards bone had formed again across the gap which he had made. Mr. Boyd thought that the result of the operation had been absolutely *nil*.—Mr. GRIFFITHS, in reply, said that he thought that when there were symptoms obviously produced by irritation of the cerebral cortex an operation might do good as a strong form of counter-irritation.

Mr. CLINTON T. DENT read a paper on Removal of the

Entire Upper Extremity for Recurrent Carcinoma after Removal of the Breast. The patient was a woman, aged fifty-three years. In December, 1894, her left breast was removed for a hard carcinoma first noticed two years previously. The axillary glands, which were affected, were also freely removed. In September, 1896, a recurrent nodule was removed from the neighbourhood of the cicatrix. Examination proved the growth to be a columnar-celled carcinoma (duct cancer), but showing transitional changes to the spheroidal-celled variety. The patient (now aged fifty-six years) was readmitted into St. George's Hospital in October, 1897, with recurrent ulcerating growth high up in the axilla. The arm was much swollen and the pain was severe. On Oct. 22nd, 1897, the arm, scapula, and outer two-thirds of the clavicle were removed by the method, save in a few details, advocated by M. Paul Berger. The subclavian artery with its scapular branches and the subclavian vein were tied after removal of part of the clavicle. The hæmorrhage did not amount to more than two or three ounces and there was no shock. The wound healed readily and the patient left for a convalescent hospital on the twenty-sixth day after the operation, which had given great relief. The growth was found on dissection to have encircled the axillary artery and vein and the main nerve trunks. The coracoid process was replaced by growth. All the diseased parts appeared to have been removed. The free recurrence of duct cancer in this case and the occurrence of secondary growths of this nature invading bone were very unusual. This case appeared to be the fourth in which the operation had been performed for disease of the same nature. The conditions in cases of recurrent carcinoma were contrasted with those met with in malignant tumours (sarcoma, chondroma, &c.) involving the bones about the shoulder and the operation in the former was shown to be far less serious. The propriety of advising removal of the entire upper extremity in suitable cases (likely to be very rare) of recurrent carcinoma after removal of the breast was discussed and favourable indications for this method of treatment were considered to be (1) previous removal of the breast with dissection of all the lymphoid tissue and fascia off the pectoral muscle; (2) slow growth of the original tumour; (3) slow growth of the recurrent disease; (4) microscopic evidence that the carcinoma is of the columnar-celled variety; (5) limitation of the recurrent growth; and (6) the certainty of relieving pain. Contra-indications would be: (1) probability that the disease could not be completely removed; (2) involvement of the thoracic wall; and (3) presence of extensive cancer *en cuirasse*. Tables of cases in which the operation has been performed (*a*) for recurrent carcinoma and (*b*) for other conditions were given.—Mr. ALFRED WILLETT hoped that the paper would be the means of calling attention to the relief which could be obtained in some cases by this operation. He had twice recommended the operation to patients, but in neither case were they willing to submit to it. The œdema of the arm which was usually coupled with great pain made life unendurable, although it was often a long time before death put an end to suffering, and this operation would often relieve patients of much of the suffering and discomfort caused by carrying about a heavy, useless, and painful arm. The sentimental objection that "mutilation" was produced was not worthy of much consideration.—Mr. STANLEY BOYD observed that the case related by Mr. Dent showed that they must not be too hasty in condemning daring operations. It was clear that in certain cases this operation was justifiable and advisable. He had never performed it on a patient, but in performing it on the cadaver he had been struck with the difficulty of bringing the skin together if Berger's directions as to the formation of flaps were followed. If any of the scapula was left he did not see how the edges were to be approximated.—Mr. DENT, in reply, said that he had not been able to take his flaps according to Berger's directions. It must be remembered that Berger mostly performed the operation for huge tumours involving the humerus and scapula over which the skin was much thinned and stretched. He (Mr. Dent) mentioned that he had seen the patient whose case he had read within the last few days. There were indications of carcinoma of the liver which were not present at the time of the operation and there was still some growth on the thorax. But the operation had entirely relieved her of the neuralgic pain which had been such a distressing feature before.

OBSTETRICAL SOCIETY OF LONDON.

Intermenstrual Pain (Mittelschmerz). — Exhibition of Specimens.

A MEETING of this society was held on March 2nd, Dr. CULLINGWORTH, President, being in the chair.

Dr. ADDINSELL read a paper on Intermenstrual Pain (Mittelschmerz). Having alluded to the paper of Sir William Priestley on Intermenstrual Dysmenorrhœa, Dr. Addinsell said the present paper was based on cases the chief characteristic of which was pain varying in intensity referred to the ovarian region and recurring with marked regularity fourteen days after the normal menstrual period. Case 1 was an unmarried woman, aged twenty-nine years, who was anæmic. She complained of great pain in the hypogastric region extending over the whole of the lower abdomen, the pain occurring regularly on the twelfth to the fourteenth day after the normal period. There were erosions of the os, anteflexion of the uterus, and an elongated swelling on the left broad ligament which disappeared after passage of thin, watery discharge. The "mittelschmerz" was not benefited by curetting. Case 2 was an unmarried woman, aged thirty-one years, who suffered from constipation. The "mittelschmerz" occurred on the fourteenth day and lasted from two to three days; the uterus contained fibroids and the left Fallopian tube was thickened. Oöphorectomy was performed and the patient had had no pain or period since. Case 3 was a woman aged twenty-eight years. She complained of pain in the left ovarian region twelve or thirteen days after her period; menstruation was normal. She had passed clear, watery fluid during the attack of pain. The uterus (retroflexed) contained fibroids. There was a soft, elastic swelling in the left broad ligament. Case 4 was a woman thirty-three years of age. She had "middle pain" sometimes and complained of discharge of clear fluid after which the pain was lessened. Dr. Addinsell remarked that in Croom's, Priestley's, and his own cases there had been a fulness or a distinct swelling in the broad ligament which had been the seat of pain. After considering the views held as to the causation of the "mittelschmerz" he concluded that it was due to a painful effort on the part of the tube to expel its contents.

Dr. HERMAN preferred the designation "intermediate monthly pain" to "middle pain." He had found that the date of its recurrence varied. He was accustomed to accept the explanation put forward by Sir William Priestley that it was due to monthly recurring painful ovulation. In most but not all of the cases he had seen there were signs of old inflammation of the uterine appendages. Adhesions offered a ready explanation of why the ovulation was painful.

Dr. AMAND ROUTH saw no difficulty in explaining this intermenstrual pain if once it could be assumed that in certain cases there was an intermenstrual cycle as well as a menstrual one. The increased tension of a local lesion would give rise to the pain.

Mr. BLAND SUTTON remarked that he had long held the view that fluid distensions of the tubes did not discharge themselves into the uterus and the old notions of intermitting hydrosalpinx and pyosalpinx were not sustained by reliable evidence.

Dr. BOXALL was of opinion that they were far from being able to fix the cause of intermenstrual pain on any one pelvic lesion. He had seen a case in which there was throughout no sign of tubal disease. The patient became pregnant but miscarried and afterwards, though she had a fibroid, she had little or no intermenstrual pain.

Dr. HEYWOOD SMITH considered the disease was associated with intermittent tubal hydrorrhœa.

Dr. ARTHUR GILES thought that if a condition of intermittent hydrosalpinx were present swelling of the uterine mucous membrane during menstruation might lead to temporary occlusion of the uterine ostia of the tubes, and this to accumulation of fluid which after some days would cause pain.

Dr. EWEN MACLEAN thought it possible that some of these cases might be regarded as an attempt at double menstruation.

The PRESIDENT said that it was evident that the cause of the phenomena was still far from being understood; none of the theories put forward appeared to be satisfactory. Tubal distension with escape of the contents through the uterine end, if it ever occurred, must be an event of extreme rarity.

An examination of Dr. Addinsell's table did not seem to warrant the statement that "in nearly all the cases a tubal lesion is present," for in only three out of the thirteen cases were the tubes known to be diseased. Watery discharges should not readily be regarded as having any pathological significance. He had known urine and even bath-water pent up in the vagina mistaken for pathological discharges.

Dr. ADDINSELL replied and stated that he had satisfied himself that in his cases a swelling existed and disappeared after the copious discharge of clear mucus accompanied by pain.

The following specimens were shown:—

Mr. TARGETT (for Dr. HILLIER): Deciduoma Malignum.

Dr. WILLIAM DUNCAN: Uterine Fibroid with Pregnancy.

Dr. C. H. ROBERTS: Double Pyosalpinx with Enormous Distension of Tubes.

Dr. JOHN PHILLIPS: Fibromyoma of the Vagina.

Dr. MACLEAN: Broad Ligament Myoma.

Dr. GOW: Cystic Intra-ligamentous Myoma with Double Uterus.

Dr. OWEN FOWLER: A Two-headed Monster.

Dr. RIVERS POLLOCK: Double Ovarian Dermoids.

HARVEIAN SOCIETY OF LONDON.

Exhibition of Cases.

A CLINICAL meeting of this society was held on March 3rd, Dr. JAMES F. GOODHART being in the chair.

Dr. G. A. SUTHERLAND showed a boy, aged six years, with a False Abdominal Tumour. After an attack of measles three years previously a bulging was observed on the left side of the abdomen below the ribs which under the influence of coughing or straining became as large as a cocoanut. There were no special symptoms associated with the swelling and no history of any local trouble. The child had suffered from severe rickets with considerable deformity of the long bones and spine. Dr. Sutherland considered the swelling to be dependent on some congenital muscular defect in the abdominal wall, which led to a hernial protrusion on straining.—Dr. JAMES TAYLOR agreed with Dr. Sutherland that the case was one of congenital absence of certain abdominal muscles. He did not, however, regard the lateral curvature as due to rickets but to the muscular inequality present. Analogous cases in which there was absence of a pectoral muscle had been described.—Mr. JACKSON CLARKE agreed with Dr. Taylor that the muscular defect had determined the development of lateral curvature in this case, but the rickety softening of the bones as shown by the marked knock-knees would also aid in producing the deviation of the vertebræ. In cases of lateral curvature due to paralysis or to rickets, whether singly or combined, the use of a light and effective spinal support was imperative.

Mr. JACKSON CLARKE showed a child under treatment for Double Congenital Club-foot. The general condition of the child was of interest in that it afforded an example of stunted growth of a not uncommon type. In the treatment of congenital club-foot in infancy Mr. Clarke had found that malleable metal splints gave better results than those of plaster-of-Paris.—Dr. LEONARD GUTHRIE thought the child presented a cretinoid appearance, although not typically myxœdematous. He suggested the use of thyroid extract in the case.—Dr. SUTHERLAND thought that taking into account the mental condition and the physical changes the patient was probably a congenital imbecile of the Mongolian type and that thyroid treatment was not likely to improve the condition.—The PRESIDENT agreed with Dr. Sutherland that the child was an imbecile and was not likely to benefit by treatment by thyroid extract.

Mr. EDMUND OWEN showed a boy, aged twelve years, on whom he had operated for Hiatus Vesicæ with Epispadias. The operation itself was completely successful in that the bladder was entirely covered in with the exception of a small opening on one side through which urine escaped. Urine, however, accumulated in the new reservoir and decomposed with deposit of phosphates, which rendered the boy's existence very unhappy. The result was so disappointing that he (Mr. Owen) almost regretted that he had done it.—Dr. EWART inquired to what extent mechanical treatment had been resorted to since the operation. The condition exhibited suggested the possibility that the prone posture might be of service in keeping the parts dry through an opening suitably placed in the middle line. Bearing in mind the very gradual flow of the secretion from the kidney it seemed as though the introduction of a seton to soak up and remove the urine as it trickled into the artificial bladder might do something towards alleviating the trouble.

Mr. RAYMOND JOHNSON brought forward the case of a boy, eight years of age, who developed Extreme Contraction of the Wrist and Fingers after a fracture of the lower extremity of the humerus. The fracture had been treated with wooden splints which as the result of undue pressure had produced a sore on the front of the forearm. An exploratory operation had shown that the condition of the limb was not dependent upon any damage to the nerves at the seat of fracture and the case was regarded as an illustration of Volkmann's "ischæmic paralysis." The paralysis and contraction, especially affecting the flexor muscles, were dependent upon inflammation and subsequent fibrous degeneration of the muscles caused by the application of splints sufficiently tightly to interfere seriously with the circulation through the part. Some slight degree of contractility still remained in the affected muscles and in order to relax the contracted tendons a short piece was excised from the middle of the shafts of the radius and ulna. The effect on the contracted wrist and fingers was satisfactory, but unfortunately the divided bones had repaired only by fibrous tissue and a leather splint was necessary to give strength to the limb.—Mr. EDMUND OWEN had met with three cases of this sort, all in children. He described one in which paralysis of the forearm had followed fracture in its upper part. He had cut down upon the median nerve and found it healthy, but the flexor muscles were in a state of fibrous degeneration. Division of the contracted tendons had produced an unsatisfactory result. Resection of the bones afforded the best promise of relief, but the surgeon must be prepared for non-union of the divided bones.

Dr. OWEN FOWLER showed a very rare variety of Double-Headed Monster. This specimen had two heads and two necks, two normal arms and an additional arm springing from where the necks diverged. This arm had at its extremity a double hand with fingers partly fused together. There was no anus, but a double penis, the second being small and placed on the front surface of the scrotum. The legs were normal, the spine was double, and the body was broad. The mother was a primipara, aged twenty-eight years. A foot presented, the breech was brought down, and except for a certain amount of traction necessary to bring the heads through the brim of the pelvis the labour was normal. There was no sign of life in the child. The mother made a good recovery. There was no family history of twins or anything else to account for this freak of nature.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.

Treatment of Affections of the Heart and Circulation by Baths, Exercises, and Climate.

A MEETING of this society was held on March 2nd, Dr. W. V. SNOW (Bournemouth), President, being in the chair.

The discussion on the Treatment of Affections of the Heart and the Circulation by Baths, Exercises, and Climate which was opened by Dr. HYDE (Buxton) and Dr. GEORGE OLIVER (Harrogate) on Jan. 28th was reopened by Dr. A. E. SANSOM, who, speaking at considerable length, advocated the combination of exercises and baths. We shall publish Dr. Sansom's address in an early issue.

Professor CLIFFORD ALLBUTT referred to the fact that the treatment of heart disease had become very largely one of hygiene. Every year hygienic medicine was extending its scope while the field of treatment by drugs was receding. In approaching the question in hand he confessed to starting with that kind of prejudice which he felt to important therapeutical means which contained strands of very important matter but were so inextricably mixed up with indiscriminate personal equations of all kinds that it was impossible to discuss them. The study of the literature of the subject had produced much the same effect upon him as upon Dr. Sansom, and he had not therefore urged his patients to take advantage of these

methods with the same freedom with which he should otherwise have done. It was to be regretted that diagrams had been published of conditions of the heart which could not in any possible way be arrived at. He believed the expansion of the lungs in the production of which exercises were so largely concerned to be an exceedingly important factor in reducing the venous, and thereby indirectly raising the arterial, blood-pressure. He thought there was a great want in clinical medicine of proper distinction between *tone* and *tension*. A heart could not possibly be improved without increasing blood-pressure. They were apt to think that all blood-pressure was peripheral. It depended, however, on the heart itself; if the heart was dilated and slack the blood-pressure would fall; on the contrary it was raised if the tone were improved.

Dr. HERON thought it a matter of perfect indifference whether the bath water were supplied at a German spa or by the Middlesex Waterworks Company and that if the patient's skin were kept clean all the good purpose served by baths would be attained. He deprecated the tendency to create a professoriate of gymnastics in connection with the treatment of heart disease, believing that devotion to games had much better be cultivated than devotion to special gymnastics.

Dr. HARRY CAMPBELL considered muscular exercise infinitely the most valuable stimulant of the heart. Resisted movements not only produced tonic contraction of the muscles immediately engaged but also of nearly all the mucles of the body. Such tonic contractions had a very definite effect upon the circulation—an effect altogether different from rythmic contractions. A large amount of blood was determined towards the muscular system, a small amount of blood leaving the muscles in proportion to the exalted cardiac action. The venous right side of the heart was thus relieved. The contraction of the abdominal muscles, moreover, tended to diminish the flow of blood into the right heart. He suggested that the same results followed from the cold bath which produced a tonic contraction of all the muscles of the body. Respiratory exercises, too, by increasing the vascular area of the lungs diminished the resistance to the flow of blood from the right side of the heart. Besides, the expirations were diminished in proportion to the inspirations. These were the conditions most conducive to the facilitation of the flow of blood from the right to the left side of the heart.

Dr. BEZLY THORNE, who showed cardiograms, said the attitude adopted by Dr. Sansom and others with reference to diagrams of the area of dulness and to sphygmograms might as well be taken up with respect to the thermometer, which had been equally abused. By a practice of delineating the results of percussion and preserving sphygmograms daily instruction was gained. He had sphymographic tracings periodically taken by nurses trained by himself to take them, and he maintained that with sufficient training and education of their powers of observation, their delicacy of touch and constant practice enabled them to produce sphygmograms with a reliability which he was prepared to pit against the skill and proficiency of any member of that society.

Mr. SHIRLEY JONES (Droitwich) thought the bath treatment the more potent factor on account of its tonic influence on the heart. Cumulative effects appeared to present themselves most commonly in cases of heart failure in connexion with a strong gouty diathesis.

Dr. KINGSCOTE, while believing that the carbonic acid gas was more invigorating, had obtained nearly the same effects with compressed air in the baths. He deprecated the use of mechanical contrivances for the exercises; they could not watch the patient as an attendant was trained to do. He recommended the inhalation of free oxygen both during the bath and the exercises; it counteracted the carbonic acid gas inhaled and increased the pulse-rate. He had found great benefit in certain cases of asthma from the use of the baths and exercises.

Dr. FORTESCUE FOX (Strathpeffer) spoke of the benefit of baths in cases of "chronic rigor" where the temperature of the skin was several degrees below that of the internal parts. High thermal treatment was inadmissible in all serious heart cases, but remarkable results could be obtained from low-pressure douche baths.

Dr. LOUIS BLANC (Aix-les-Bains) did not claim any special action for the baths at Aix-les-Bains. It was from the method practised that good results were obtained.

Dr. BLACK JONES (Llangammarch) had found from the use of the baths of Llangammarch Wells that the diminution of the pulse-rate, though slight when the patient left the bath, was much more appreciable half an hour afterwards and continued so for some hours. He had found benefit from the internal use of the barium waters of the wells, which increased the force of the ventricular contraction and prolonged the diastole, and were also useful on account of their diuretic properties.

Dr. C. W. CHAPMAN thought it necessary to have opportunity for long-continued observation of patients before it was possible to form an opinion as to the results of treatment.

The PRESIDENT congratulated the society on the excellence of the papers and discussions.

Dr. HYDE (Buxton) replied.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

Matrices.—Composite Odontome.—X Rays in Dental Diagnosis.—Exhibition of Skiagrams.—Formaldehyde in the Treatment of the Dental Pulp.—Formaldehyde and its Application to Dentistry.

THE ordinary monthly meeting of this society was held on March 7th.

The HONORARY SECRETARY on behalf of Mr. Brunton read a communication on Matrices.

Mr. F. W. RICHARDS read the notes of an interesting case of a Composite Odontome, and Mr. STORER BENNETT referred to a case of Removal of the Maxilla for a tumour of doubtful character in a young person. The growth which completely filled the antrum proved to be a mass of cancellous bone containing in its midst a tooth, probably a supernumerary.

Mr. J. F. COLYER showed some lantern slides illustrating the value of the X Rays in Dental Diagnosis. In one case, that of a female patient, aged fifteen years, the deciduous teeth were all persistent. The skiagrams of the mouth, however, showed quite distinctly the presence in the alveolus of the unerupted permanent teeth. In another case where the central incisors were separated the skiagram showed clearly the presence of a supernumerary tooth embedded in the alveolus between the incisors.

Mr. STOREY (Hull) also showed Skiagrams of the Maxilla of a patient with the left central incisor dilacerated.—Mr. D. P. GABELL said that in taking skiagrams it was a useful plan to take two in slightly different positions, as these when examined through a stereoscope would give a much better idea of depth.

Mr. J. F. COLYER read a short paper on Formaldehyde in the Treatment of the Dental Pulp, with especial reference to a formaldehyde cement under the name of "Formagen." He referred to the use of "formalin" (40 per cent. solution of formaldehyde) and stated that Lepkowski had found it give excellent results with the pulp as far as regarded its germicide and preservative properties, but the pain caused by its use was a distinct disadvantage. "Formagen," which was composed of a fluid and powder said to be charged with formaldehyde vapour, gave on the other hand apparently good results without pain. Various analyses of formagen which Mr. Colyer had obtained were referred to and it was pointed out that the main constituent of the powder was calcium carbonate and a caustic alkali, the fluid being methyl salicylate, eugenol, and phenol. The bacteriological researches of Max Bauchwitz as to the use of formagen were referred to and also the results obtained by A. Kunert. Mr. Colyer stated that he had used the drug in almost every class of exposed and septic pulp and had found excellent results follow although the time he had used it did not permit of him forming a very definite opinion as to whether the results obtained would be quite permanent.

The HONORARY SECRETARY read a communication by Mr. Boyd Wallis on Formaldehyde and its Application to Dentistry.—A discussion ensued on the two papers, in which Mr. COFFIN, Mr. BREWARD NEALE, Mr. MUMMERY, Mr. ROBBINS, Mr. F. J. BENNETT, Mr. NORTHCROFT, Mr. MORGAN HUGHES, Mr. STORER BENNETT, and Mr. DOLAMORE took part.

The meeting then adjourned.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

Acute Yellow Atrophy of the Liver.—Phosphorus Poisoning.—Hallux Valgus.—Analysis of 1000 Cases of Midwifery.—Exhibition of Cases and Specimens.

A MEETING of this society was held on March 1st, the President, Dr. ARNOLD EVANS, being in the chair.

Dr. GLADSTONE read notes on cases of (1) Acute Yellow Atrophy of the Liver, and (2) Phosphorus Poisoning. The patient in the first case was a woman, aged twenty-four years, unmarried, who worked in a rubber factory in which naphtha was used, but she had nothing to do with phosphorus. She was taken ill six weeks before admission and in two days was markedly jaundiced. Thirst and nausea were complained of. The bowels were constipated and the evacuations pale. At no time till two days before admission to the infirmary was there pain, vomiting, or diarrhœa. There was no history of phosphorus poisoning. Two days before admission she took some podophyllin pills which produced vomiting and diarrhœa; the legs also were swollen. She walked to the infirmary but was in a peculiar, drowsy mental condition. The skin was deeply bronzed and the conjunctivæ were yellow. The liver dulness extended from the fourth to the sixth space in the nipple line. There was slight œdema of the ankles. Frequent vomiting commenced on the evening of admission and continued for three days. The mental dulness increased, she would not answer when spoken to, and she threw herself over on to her face when disturbed. On the day before she died she was at first delirious but afterwards passed into a comatose condition and death took place on the fourth day. By this time the liver dulness only occupied the fourth and fifth spaces in the nipple line. The temperature was subnormal till the evening of the fourth day, when it rose to 100·6° F. just before death. The urine was loaded with albumin and contained casts and blood. Leucin and tyrosin were not found in the urine. Post mortem the liver was found to be shrunk up under the diaphragm and to be thin and flat; its weight was 24½ oz. The capsule was wrinkled. The organ was of a purplish colour externally and tawny yellow on section, showing yellow circles on a darker ground. Its consistency was firm and not friable. The kidneys and heart were in a state of fatty degeneration. The uterus was normal. Microscopically there was great atrophy of the liver-cells. Although the jaundice had been of six weeks' duration yet the acute symptoms of cholæmia had only come on for six days, and as the appearances post mortem were those of acute yellow atrophy it was considered to be a case of that disease. The second case was that of a man, fifty-four years of age, a labourer, who was admitted to the infirmary on Sept. 29th, 1897, and was discharged on Nov. 29th, 1897. The patient had been found in the street insensible and was thought to be drunk till a pot which had contained phosphorus paste was discovered. The stomach was at once washed out by the police surgeon. On admission to the infirmary he was violent, evidently having been drinking. The stomach was again washed out and the teeth cleaned to remove particles of the paste. Three grains of calomel were given at 11.30 P.M. and two grains of copper sulphate with thirty grains of carbonate of magnesia every two hours through the night. The carbonate of magnesia was continued every two hours for four days. For the first four days he seemed quite well and had no symptoms except slight fever and drowsiness. The bowels were freely moved by the calomel. On Oct. 2nd the temperature rose to 102° and signs of bronchitis were present at both bases. On Oct. 3rd there were vomiting, purging, and abdominal pain, and jaundice appeared and hiccough was present. The diarrhœa, vomiting, and hiccough passed away after four days but the jaundice deepened till in a week the skin had a bronzed appearance. There was great muscular weakness and the muscles were very flabby. On Oct. 11th the blood contained a normal quantity of hæmoglobin and red discs but the leucocytes appeared granular and did not stain. The jaundice began to clear about Nov. 1st and had quite disappeared by Nov. 11th. There was never any leucin or tyrosin found in the urine; the quantity of urea showed some diminution, the lowest quantity being 206 gr. on Oct. 6th. There was a deposit of phosphates during the first week. There was no albumin. There were no hæmorrhages except that on Oct. 4th there appeared to be some altered blood in the vomit. The edge of the liver was always palpable at or below the costal margin. In addition to the treatment before mentioned a drachm of ozonic ether was given thrice daily till Oct. 27th, when a mixture of mercuric chloride, nux vomica, and diluted nitro-hydrochloric acid was substituted. Dr. Gladstone remarked that as alcohol was a solvent of phosphorus the patient's chances were diminished by the drink he had taken.—The case was discussed by Dr. EVANS, Dr. MAJOR, Dr. CAMPBELL, Dr. CARTER, and Dr. BRONNER, it being remarked that recovery was very unusual after jaundice is pronounced in cases of phosphorus poisoning.

Mr. HORROCKS read a paper on Hallux Valgus, giving an account of its etiology and treatment and showing that it usually resulted from the wearing of badly-shaped boots.

Dr. MCLEAN gave an Analysis of 1000 Cases of Midwifery and compared his statistics with those usually given in text-books.

Mr. ROBSON gave a microscopical demonstration. Among other specimens was a Section of a Tongue affected with Squamous Epithelioma, showing at the same time an Encysted Trichina Spiralis.

Dr. JAMES KERR showed two patients, brothers, suffering from Friedreich's Ataxia.

Dr. STEVENSON showed a Placenta which had undergone Extensive Fatty Degeneration, and stated that the patient had had three still-born children and that in each case the placenta had shown similar changes.

Dr. ALTHORP showed an Ovarian Cyst which had been successfully removed from a woman aged thirty-five years. The cyst had been universally adherent, and Dr. Althorp discussed the propriety of attempting to remove the cyst entire in such cases.

MANCHESTER MEDICAL SOCIETY.

Nephro-lithotomy.—Cause of Death in Peritonitis.—Arthrectomy of the Knee-joint.—Retinal Changes in Cerebral Hæmorrhage, &c.

AT the last meeting of this society held at Owens College Mr. T. JONES gave particulars of a case of Nephro-lithotomy. The patient was a man, twenty-nine years of age, who consulted Mr. Jones on Oct. 15th, 1897, when the following history was obtained. In 1889 he had a sharp pain in the left lumbar region just below the costal margin. It lasted ten or twelve hours and soon afterwards it was noticed that the urine contained a considerable quantity of blood intimately mixed with it. No stone was passed nor did he notice any gravel in his urine. There were three more attacks of pain similar in character to the first at intervals of some months. Some years later the patient noticed pus in his urine and this continued up to the time of Mr. Jones seeing him. He has been under treatment continuously for six or seven years, during which various remedies for clearing the urine have been tried without any success. There were no bladder symptoms and the patient's general condition, which was excellent, removed the possibility of any tuberculous condition of the urinary apparatus. Exploration of the bladder under chloroform gave negative results, but while under the influence of the anæsthetic abdominal examination revealed a very decided fulness in the left kidney region. Nephro-lithotomy was performed on Jan. 16th, when a large stone, mainly composed of oxalate of lime, was found lying across the pelvis of the kidney, one end being in the somewhat dilated pelvis and the other moulded in a calyx. A small projection connected with the main mass lay in the upper part of the ureter. The position and fixity of the stone accounted for the absence of symptoms. The pelvis of the kidney was washed out with a boric and saline solution and the ends of the incision were brought together, the middle being left open for the drainage tube which extended down as far as the kidney. The wound was healed in three weeks from the date of operation. As soon as the urine was free from blood a marked diminution in the quantity of pus in it was observed and in a month even this had completely cleared away.

Mr. ALEXANDER WILSON made a communication on the Immediate Cause of Death in Peritonitis and the Treatment of the Disease. He expressed the opinion that in peritonitis death was caused by the absorption of septic poison from the peritoneum, which poison acted chiefly on the circulation, and that the immediate cause of death was from vaso-motor paralysis. He suggested that in addition to operative

treatment attempts should be made to obviate the vaso-motor paralysis by transfusion and the administration of drugs which raise the blood-pressure, such as extract of suprarenal capsules.

Mr. JOSEPH COLLIER read a paper on the After-treatment of Arthrectomy of the Knee-joint, in which he called attention to the possibility of preserving the power of extension in the knee-joint, should it become flexed after arthrectomy, by keeping the patella moveable from the first. Notwithstanding the greatest care after this operation, as after excision, the knee tends in certain cases to become flexed even after many years and though apparently bony ankylosis in good position has taken place; this condition of flexion is especially liable to occur between the ages of eleven and fourteen years. For many reasons given he considered this liability to flexion to be almost entirely due to the action of the hamstrings in walking, there being with the usual after-treatment no corresponding action of the quadriceps extensor possible owing to the patella being glued down to the femur. He finds that in a certain percentage of cases it is possible to keep the patella free by frequently moving it and showed a case operated upon two years ago in which, though about quarter flexion had taken place after the removal of all fixing apparatus, still owing to the patella having been kept free there was full and forcible power of extension, giving considerable facility of movement and almost a normal mode and power of walking.

Dr. R. T. WILLIAMSON read a paper on Retinal Changes in Cerebral Hæmorrhage, Embolism, and Thrombosis, in which he recorded the results of ophthalmoscopic examination in a number of cases. In cases of hemiplegia from cerebral hæmorrhage which terminate fatally a hæmorrhage is not infrequently found in the retina on the same side as the brain lesion, whilst the opposite retina is normal. In cerebral embolism the same condition is occasionally met with and the retinal vessels may be slightly dilated on the side of the brain lesion. In thrombosis of the middle cerebral artery, when the thrombus extends down into the internal carotid, the vessels of the retina on the side of the brain lesion may be markedly dilated and tortuous, whilst the retinal vessels of the opposite eye are normal.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.—Cirrhosis of the Liver.

THE sixth ordinary meeting of this society was held on March 2nd, Dr. JAMES CARMICHAEL being in the chair.

Dr. G. A. GIBSON showed a woman, aged twenty-three years, who had undergone operation for Ruptured Gastric Ulcer. She had suffered for some time previously from gastric symptoms and while doing her work she was seized with sudden severe abdominal pain. On admission to the Royal Infirmary about thirty hours subsequently she was found to be suffering from acute general peritonitis.—Mr. HODSDON explained the nature of the operation which was performed. On opening the abdomen lymph and commencing pus formation were found above the colon. The perforation was fairly high up and situated under the liver. Much difficulty was experienced in closing the opening. The adherent lymph was removed, the peritoneal cavity was flushed out, and a glass-tube was placed in the pouch of of Douglas. The temperature was 100·8° F. on the subsequent day. The tube was removed on the third and the wound dressed on the tenth day, when it was found that much pus exuded from it. This pus did not come from the wound itself, but from the abdomen. The wound was drained and the subsequent progress was uninterrupted. The operation lasted about one hour.

Dr. NORMAN WALKER exhibited a boy suffering from Lichen Scrofulosorum. It was a rather rare form of skin disease and was said to appear in those who were the subjects of tuberculous disease. It was, however, not itself tuberculous. It was said by Hebra, and quoted by McCall Anderson, to be a disease of adults, but the general view was that it was chiefly seen in children. In 90 out of 100 cases it occurred in tuberculous subjects, but in the case exhibited there was no evidence of this disease. The lesions occurred generally on the trunk, but in this case they extended to the thighs and legs. The spots were bluish in colour. The disease was supposed to be due to excretion of tuberculous products. It was usually cured by the administration of cod-liver oil internally and externally.

Professor ANNANDALE presented a man who had suffered from an old Unreduced Dislocation of the Head of the Humerus. As the arm was perfectly useless and as several attempts at reduction had been tried Professor Annandale exposed the joint by an incision carried along the lower edge of the clavicle, so dividing the attachments of the deltoid to the clavicle and acromion. In this way free access was obtained to the glenoid cavity without endangering either nerves or vessels. The glenoid was found to be split and the head of the humerus displaced backwards. It was found to be impossible to reduce the dislocation so the head of the humerus was excised. The operation was performed only seventeen days ago, but even at the present time the result seemed excellent.

Mr. STILES showed three children. The first was the subject of a Congenital Hernia on the right side which contained the vermiform appendix. On two occasions during operation for hernia Mr. Stiles had met with this condition. The second child had a Funicular Hydrocele probably as the result of the draining down of fluid from a tuberculous peritonitis. The third case was a Dislocation of the Left Hip-joint which might be mistaken for hip-joint disease. All movements of the limb were quite free with the exception of abduction. The child could walk quite well and the only difference was that the limb was shorter than the right and the head dislocated upwards towards the crest of the ilium.

Dr. BYROM BRAMWELL exhibited: 1. An Aneurysm Pointing in an Unusual Position. The patient was a man who had a distinct history of a strain, though none of syphilis. In the position of the right breast there was a large, pulsating, external aneurysm. The patient suffered from angina-like pains. Dr. Bramwell had only seen one other case where the aneurysm projected so far towards the right. 2. Tabetic Club-foot. A young man presenting all the symptoms of locomotor ataxia showed this rare form of chronic bone disease. The sole was filled up with bony swelling and on the dorsum was a similar projection. The patient had suffered from syphilis nine years previously. It was not, however, until he had injured his foot by a fall that the swelling came on and eleven months subsequently symptoms of locomotor ataxia presented themselves. 3. Progressive Muscular Atrophy. The patient was a woman who suffered from a rare variety of this disease which had lasted for eighteen months. The right arm and deltoid were quite paralysed. The facial and ocular muscles were also implicated and this was a very rare condition to find. She had difficulty in swallowing and speaking. The ocular muscles in the right eye were almost useless. The external rectus in the left eye was also affected, as were also the sterno-mastoid and the trapezius. Treatment by hypodermic injections of strychnine was said by Gowers to arrest the disease. In this case no benefit seemed to have resulted from its free use. It was begun as two minims thrice daily and has now been increased to from 11 to 14 minims thrice daily.

Professor ANNANDALE exhibited some rare preparations: 1. Meckel's Diverticulum in a Hernial Sac. The patient was a boy, aged three years, with an irreducible gurgling scrotal swelling. The diagnosis was a congenital hernia with adhesions. On cutting down, however, a diverticulum two inches long was found and on drawing this down it was found to be Meckel's diverticulum. The whole tunica vaginalis, diverticulum, and testis were removed and in spite of the patient contracting scarlet fever two days subsequently to the operation recovery was uninterrupted. 2. Appendix removed from the Anterior Surface of the Left Lobe of the Liver to which it was adherent. In the embryo the cæcum and appendix are found high up. It may have been that this condition had persisted in this case. 3. Papilloma of the Bladder removed by suprapubic incision. 4. Elbow-joint removed so as to obtain Movement. An injury which had fractured the upper end of the radius. Much callus had been thrown out and adhesion had resulted between this and the external condyle. There was no injury to the elbow-joint itself. 5. Loose Bodies removed from a Bursa underneath the deltoid. This was a rare situation. 6. Ruptured Tubal Pregnancy. The patient was a woman brought into the hospital apparently in a dying condition. The abdomen was opened and the peritoneal cavity and pelvis were found filled with blood. In the left

Fallopian tube was a swelling the size of a small orange. This had ruptured and an ovum was seen within. The tube and ovary were removed and the patient was now convalescent.

Mr. ALEXIS THOMSON showed a specimen from an Infant, three days old. Nothing was retained in the stomach and the child only passed a little blood per rectum. The upper end of the rectum ended abruptly and blindly. On opening the abdomen the colon was found to be absent. An artificial anus was made in the small intestine but the infant subsequently died. The small intestine was found to end in a dilated extremity at the left side and the colon was represented by a small tube.

Dr. G. A. GIBSON exhibited three drawings—viz.: (1) Choroiditis from a girl, aged twenty years, who had waxy disease of the liver, spleen, and kidneys; (2 and 3) from the Brain of a girl, aged twenty-three years, who became deeply unconscious, with paralysis of the legs and arms and external strabismus. The hæmorrhage evidently affected the motor tracts of both sides, probably about the aqueduct of Sylvius. The necropsy revealed enormous hæmorrhage into both lateral ventricles. From these it had burst into the third and so to the fourth ventricles, dilating the aqueduct of Sylvius.

Dr. ALEXANDER JAMES read a paper on the Various Forms of Cirrhosis of the Liver. He desired to point out that there was a unity in the pathological processes between acute yellow atrophy and primary cancer of the liver with cirrhosis as the link connecting these. Cirrhosis of the liver occurs in two main forms—(1) small atrophic; and (2) large atrophic cirrhosis characterised by catarrhal inflammation of the bile-ducts. Many cases which had come under Dr. James's own observation were related to show the characteristic symptoms and pathological conditions of each variety. Between these types, however, transitional forms occur and three cases were related to illustrate the changes which occur in this transition from large to small cirrhosis. At one period the signs and physical signs of large cirrhosis are found, then later those of small cirrhosis present themselves. There are great differences in the periods of these transitions. If anything occurs to disturb the relative production of parenchyma and fibrous tissue then one variety of cirrhosis may result. If the factor which causes this disturbance of balance is more potent than another then the period of transition will be lessened. A case of gastric ulcer was related where the cicatrix was adherent to the liver at the portal fissure. Fibrous tissue had spread into the liver from this site along the bile-ducts and so throughout the organ. In another case the fibrous tissue had spread along the radicles of the portal veins. In portal vein cirrhosis the liver is small, for the nutritive supply to the organ is cut off. In bile-duct cirrhosis, on the contrary, the liver is large because there is no interference with the nutritive supply. Again, fibrosis may be the result of disease of the liver itself—e.g., syphilitic gumma; but localised diseases may occur in the liver independently of this, as patches of cirrhosis. Dr. James related several cases where localised hepatic inflammation set up cirrhosis of the liver. A cirrhotic condition of the liver may be the result of many causes—e.g., irritating substances in the blood, alcohol, syphilis, malaria, catarrhal obstruction in bile-ducts or in hepatic veins; the spreading inwards of fibrous tissue from the surface. In cirrhosis there is overgrowth of fibrous tissue and relative disappearance of parenchyma. In acute yellow atrophy there is a rapid disappearance of parenchyma. The liver is shrunken and flattened out. There is little change in the amount of interstitial tissue in ordinary cases, while in more chronic cases there is an actual increase in the amount of interstitial tissue. The toxin in the latter case has produced death of the liver cells but overgrowth of the connective tissue. If the toxin be in smaller amount or of a less virulence—e.g., alcohol—cirrhosis ensues. If much alcohol be taken at once an acute yellow atrophy is produced. The same happens to horses when lupine in large amount get into their food. Dr. James went on to discuss the nutrition and growth of the cell. In the case of liver cells which are highly developed a stimulus which is sufficient to kill them only stimulates the fibrous tissue cells to overgrowth. In cirrhosis the toxic substance acts much more mildly so that the interstitial cells increase to a marked degree. As regards cancer of the liver, the etiology of cancer growth was discussed and Cohnheim's embryonic tissue residues theory was condemned as being most unphilosophical. The conclusion arrived at by Dr. James was that the same toxin produces all three diseases and this depends entirely on the relative strength of the toxin.—In the discussion which followed Dr. MUIR and Dr. RUSSELL criticised adversely Dr. James's contentions.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF ANATOMY AND PHYSIOLOGY.

The Teaching of Histology.—The Effects of Peptones and Albumoses on the Kidney.—Cranio-cerebral Topography.

A MEETING of this section was held on Feb. 4th, Dr. D. J. COFFEY, the President, being in the chair.

The PRESIDENT, having thanked the Fellows of the Academy for the honour they had conferred on him in electing him President of the Section, said that as he was about to deal with a subject of a controversial character—namely, the Teaching of Histology—he had thought it better to treat it in a paper and invite discussion rather than to make it an address. He thought that a few months after the student had gone through his practical classes and lectures in histology the chief result which remained to him was that he had extended his knowledge of the anatomy of minute structure. His mind is stored with valuable information, but he is devoid of a practical knowledge which could be of the greatest use and interest to him in the study of pathology or in application to many branches of biological science. Again, the value of microscopic methods in teaching physiological chemistry is lost sight of. Histological teaching should be made more useful on the physiological side and made thoroughly practical so that the student will leave the laboratory equipped with something more than information — viz, a method of investigation. This can be done by devoting, say, one-third of the present course to the study of the cell and using arthropod animals for a complete demonstration—first, of structure and of the action of the various reagents employed in fixing, hardening, &c., then of staining, methods which would naturally be followed in investigating cell structure.—Professor W. H. THOMPSON said he was sure that there could be no two opinions as to the advisability of giving students a course of cytology; but when he came to think of the already pretty severe course of histology, together with practical physiology, which the ordinary medical student had to acquire in one or two years he shrank from it.—Professor J. M. PUBSER said that fixing and staining methods were very difficult and for these and other reasons he thought that to begin with cytology would be to begin at the wrong end.

Professor W. H. THOMPSON gave a preliminary communication dealing with the Influence of Peptones and Albumoses on the Kidney when injected into the circulation. The following is a short summary of the results at which he has arrived: 1. These substances do not exert so great an influence on the walls of the kidney blood-vessels as they do on those of other splanchnic blood-vessels. 2. They cause a marked increase in the secretion of urine, the maximum occurring during the second hour after injection. 3. The urine secreted is dilute, its percentage of urea and total nitrogen being diminished. 4. The total amount of urea and nitrogen is nevertheless considerably increased. 5. Part of the peptone (or albumose) is excreted during the first hour after injection, but the greater part appears to be retained. The amount so retained, however, is not sufficient to supply enough nitrogen for the increased output of urea and other nitrogenous compounds.

Professor J. SYMINGTON described the Peculiarities of the Larynx in certain Marsupials, exhibited a series of Scapulæ to show the mode of ossification of the coracoid elements of the bone, and gave a communication on a Method he had adopted for Demonstrating the Relation of the Skin and Skull to both the External Surface and the Interior of the Brain. — Professor CUNNINGHAM said he thought that the specimens shown were probably the most beautiful specimens of cranio-cerebral topography he had ever seen.

ERRATUM.—In the abstract of Dr. Dawson's paper on the Physical Signs of Stomach Disease, published in THE LANCET of Feb. 12th, page 440, the sentence beginning on the ninth line should run as follows: "In nineteen consecutive fatal cases where a post-mortem examination showed malignant disease of the fundus of the stomach no tumour was felt in one half."

Reviews and Notices of Books.

Le Choléra en Europe depuis son Origine jusqu'à nos Jours. Par le Docteur Ph. HAUSER. (*Cholera in Europe from its Origin to the Present Time.* By Dr. PH. HAUSER.) Paris. 1897. Price 15 francs.

DR. HAUSER, of Madrid, has chosen a time for the publication of his extensive study into the epidemiology of cholera when there is a lull in the activity of the disease. The facts dealt with in the 540 pages of his book must have taken him years to accumulate and sift, but the result of his labour is the most complete and comprehensive survey of the subject that the student of epidemiology will find. The object which the author set before himself was to collect the principal facts connected with every pandemic of the disease, not merely those that have been common to each successive invasion of Europe, but also those that have attracted the attention of epidemiologists in any country by reason of their unusual or peculiar character, and to deduce from the conditions giving rise to them the evolutionary law which must underlie the spread of cholera from east to west.

In the first few introductory chapters stress is laid on the fact that all great epidemics in Europe have coincided in point of time with some great social change. Thus the importation of leprosy and the plague from the East and their rapid spread in Europe were favoured by the profound disturbance among the peoples of the different countries following on the Crusades. Typhus fever and scurvy first appeared and raged for several years in Europe after the end of the Thirty Years' War. So, too, the first appearance of cholera in Russia by way of Persia coincided with the conclusion of two wars that had been waged by Russia against Persia and Turkey. The loss to Russia in men alone had been enormous, while Persia was reduced almost to a desert, so that when the germs of cholera were conveyed into Turkestan and Persia and thence to Russia, they found a soil, owing to neglect, suitable for their rapid development.

It may at once be said that the view which this distinguished epidemiologist takes of the natural history of cholera is that the development of the bacilli is dependent not so much on water or on the temperature of the air as on the temperature of the topmost layers of a porous soil combined with a moderate degree of moisture. An excess of moisture in, or an excess of dryness of, the soil is opposed to the vital conditions of the cholera comma bacillus. His interpretation of the five widespread epidemics of the disease in Europe since 1829 (and to their description some 350 pages are devoted) is based on the above theory. In supporting it his argument is closely reasoned and often he is scornful of what he considers the loose manner in which the supporters of the water-borne theory of cholera have sought to explain the facts. Russia he holds to be the real danger to Europe, for once cholera has found its way there by the overland route from the delta of the Ganges it always continues to show its presence over a period of eight or nine years, whereas if it reaches Europe through the Mediterranean ports its duration is never more than three years. In order to explain this fact a chapter is devoted to the climatological conditions existing in Russia which bring about the apparent paradox that while excessive warmth is one of the most necessary causes of the development of an epidemic of cholera, nevertheless the most southerly countries of Europe have suffered relatively far less from the scourge than has Russia with its rigorous winters. The existence of the snow offers an obstacle to a too great cooling of the soil, and while the growth of the comma bacilli is inhibited, they are not destroyed and are ready to develope on the accession of moisture due to the thawing of the snow in spring and to the warmth of summer. The portions of Russia most favourable from their climatological conditions for the retention and development under suitable conditions of the cholera contagium are Astrakhan, in which is situated the lower basin of the Volga, Kiew, containing the basin of the Dnieper, and the district of Kalicz, which forms the boundary between Prussia and Russia, and it is just these districts that become the hotbeds for its growth.

It is interesting from this standpoint to note how Dr. Hauser explains the special incidence and special severity of the disease from 1883 to 1886 in Spain. The province of Valentia, where it commenced, closely resembles, in his opinion, both in its physical and geological characters those parts of India where cholera is endemic. The soil is alluvial, consisting of organic and mineral detritus deposited by the sea, and it yields a luxuriant vegetation. The social conditions of the inhabitants are not unlike those of the Mecca pilgrims, as they have to work all day under a blazing sun and to sleep at night in the open exposed to malarial effluvia. The cholera bacilli, therefore, when imported there from India regain their wonted toxicity under the telluric conditions and social habits of the inhabitants natural to them. The spontaneous outbreak of cholera in Spain in 1890 was due, he is certain, to a revivification of bacilli which had remained latent in the soil since 1885, as was the case also in the Paris epidemic of 1892. On the soil theory alone is it possible to explain this spontaneous origin of cholera which has occasionally occurred in Europe.

The similarity of Dr. Hauser's view on the development of cholera with that of those who are authorities on its behaviour in India is most striking. Such a sentence as the following, used by Professor Lane Notter when speaking of the endemic prevalence of cholera in India, is repeated over and over again in the pages of this book: "Provided a soil be porous or permeable to air, free from putrefaction, and free from any excess or marked deficiency of water, commas can live and multiply in it for an indefinite time."

In the second part of his work Dr. Hauser leaves the broad facts of the behaviour of cholera in actual epidemics in order to discuss the more intricate behaviour of the cholera bacillus in the laboratory, and he seeks to reconcile its behaviour under this changed condition with the phenomena incidental to it when in the natural state. Beyond conceding (1) that cholera is a contagious disease of which the comma bacillus is the exciting cause, (2) that the habitat of the bacillus is the intestine, and (3) that the symptoms of the disease are due to the absorption through the intestinal wall of toxines secreted by the bacilli, he accepts none of the views of Koch and throws the whole weight of his authority on the side of Pettenkofer. The position of the adherents of Koch he summarises thus: the comma bacillus can infect man directly by contagion, but for an infection of a wholesale character it is necessary for the bacilli to be distributed by water. Precautionary measures, therefore, resolve themselves into isolation of those who are affected and the provision of a water-supply of an irreproachable character. He proceeds to attack this view by showing (1) that comma bacilli are sometimes found in the dejecta of those who do not show definite signs of the disease, (2) that in some cases where the symptoms are most pronounced the specific organisms are absent, and (3) that the occasions in which bacilli have been found in water are extremely few. To those who have read the official reports on the outbreaks of cholera in Hamburg in 1892 and 1893, in Stettin and other places in the German Empire in 1893, and in Paris in 1892, the conclusion would seem to be inevitable that drinking water was the *causa causans*, however much its spread may have been aided by a filthy

soil and insanitary dwellings. It is only fair to Dr. Hauser to say that he also has studied them and thinks that considerations of soil were not taken account of sufficiently by the investigators. In Russia, too, Dr. Clemow, in his book on the Epidemic of 1892 in that country, cites numerous cases where the washing of infected linen in ponds and watercourses was the signal for an explosion of cholera. It is difficult to understand how Dr. Hauser can cite Professor Netter, of Paris, as an opponent of the water-borne theory when it was he who, in conjunction with Professor Proust and Dr. Thoinot and Dr. Ogier, reported that the cholera in the suburbs of Paris in 1892 was limited to those places alone where Seine water was drunk although there was plenty of opportunity for its spreading in other ways.

Dr. Hauser is right in insisting that a good water-supply is not a sufficient protection against cholera and typhoid fever, but that it must be combined with good drainage and other sanitary work. Berlin, for instance, showed no appreciable diminution in its death-rate from typhoid fever on the introduction of an improved water-supply in 1857, but did so at once when the sewerage and drainage works were commenced in 1873, the diminution extending to each district synchronously with the completion of the work. In this connexion Dr. Hauser emphasises repeatedly the benefits that have accrued to Great Britain from the adoption in the large cities and in many of the port towns of this policy.

From his analysis of the great western diffusion of cholera since 1892 the late Dr. F. W. Barry stated as his opinion that "all explosions of cholera as to which detailed evidence has been forthcoming have been found on investigation to have been referable to specifically polluted water-supplies," and the statement sums up the general opinion in this country on the subject. Whether the study of Dr. Hauser's book will modify that view remains to be seen. It can with truth be said that it is the most brilliant exposition that has been made on the difficult subject of the relation of conditions of the soil to the spread of cholera and typhoid fever. He is at his best when describing the remarkable behaviour of the disease in his own country of Spain, and it is abundantly evident from his researches that the conditions of soil existing there are such as to favour the growth of the cholera comma bacillus when once introduced.

In the concluding chapters an account is given of the various international congresses which have been held, from that of Paris in 1851 to that of Dresden in 1893 and Paris in 1894, with regard to the defence of Europe against the importation of the disease. In it he points out that the acceptance by other countries in place of quarantine of such measures as the surveillance of persons coming from infected places, the disinfection of infected linen, and the compulsory notification by one country to another of a "foyer" of choleraic infection, was brought about by the action of Great Britain, which refused to be bound by an illogical, unscientific, and impracticable international convention.

Pictorial Atlas of Skin Diseases from Models in the Museum of Saint Louis Hospital, Paris. English edition. Edited and annotated by J. J. PRINGLE, M.B. Edin., F.R.C.P. Lond. London: F. J. Rebman. 1895-1897. In Twelve Parts. Price 10*s.* 6*d.* each part.

THE remaining parts of this interesting atlas are now before us. The first three parts and Part VII. have already received notice at our hands. The work has been completed with commendable regularity, aided no doubt by the fact that all the material from which the chromo-lithographs were made was complete from the first. We may now, therefore, take a survey of this work as a whole. As regards the artistic merits there can be no doubt that they are considerable and of very even quality, the lesions being nearly always well portrayed. The defects are due to their being taken from wax models instead of from life, so that the yellow ground tint and closed eyes where the face is represented give a corpse-like appearance that is somewhat unpleasing. This, however, is only an æsthetic defect and does not interfere with their practical utility. From the practical side it is also sometimes a drawback, as it is in some plates difficult to say from what part of the body the cast has been taken, and distribution can seldom be represented. Nevertheless, it is an undoubted professional gain to have this most important collection of excellent models brought as it were to our doors, and we feel rather inclined to ask for more than the fifty plates comprised in the atlas, than to carp at any drawbacks inherent in all wax models. Of the whole number of plates fourteen are devoted to inflammations, fifteen to syphilides, ten to infiltrating neoplasms, and seven to tumours of the skin, and there is a fair mixture of typical and anomalous or rare cases.

Owing to differences in French nomenclature and also to the French school holding views on many points, both clinical and pathological, different to ours, it was essential that the work should be presented to the profession in general in England, not only in an English dress, but with explanatory comments to reconcile real or apparent discrepancies between English and French views, and the publishers have been happy in their choice of Dr. Pringle as editor, which has ensured a smooth translation and has, moreover, added much to the practical usefulness of the atlas. As an example of this may be instanced Plate X. among many others, labelled by Dr. Hallopeau "Dermatitis herpetiformis in concentric circles." The editor very properly draws attention to the fact that this diagnosis is not above criticism and there is no doubt that it would be regarded by many dermatologists as the herpes iris of Bateman. So, too, in the note to Plate XVIII., "Chilblain lupus." The editor has obtained from Mr. Hutchinson the opinion that it is not the same as the chilblain lupus that he has described. We should not, however, agree with Dr. Pringle that the types of ecthyma, so-called, depicted on Plate XX. are not known in Great Britain; but this is a minor point, and on the whole the only fault is that Dr. Pringle has been too modest in his criticisms and his readers would have been pleased to have had more of them. We have therefore much pleasure in congratulating both editor and publishers on the completion of this English version of an important and interesting contribution to dermatology by our *confrères* across the channel.

Aphasia and the Cerebral Speech Mechanism. By WILLIAM ELDER, M.D., F.R.C.P. Edin. London: H. K. Lewis. Pp. 260. 1897. Price 10*s.* 6*d.*

DR. ELDER'S book is one of the best introductions which we know to the study of an interesting but difficult subject. Beginning with a historical sketch of the origin and development of current views in regard to aphasia it proceeds to deal with the reception, retention, and production of speech. The routes by which impulses subserving speech travel are next considered and the mechanism by which it is effected, viewed in the light of conditions showing its disorganisation. In the succeeding chapters the clinical varieties of aphasia are described and numerous cases are cited to strengthen or elucidate statements in the text. Finally, disturbances of the musical faculty and the surgical aspects of aphasia are briefly alluded to.

The book cannot be said to be profound, but it is comprehensive and at the same time unusually free from the difficult abstruseness which so often repels the reader from treatises on speech. It is pervaded throughout by the teachings of Wyllie, many of whose terms are adopted without sufficient explanation for the reader who happens to be unfamiliar

with them. The well-known views of Bastian receive but little attention, but taking the book as a whole it will prove, we believe, to be most useful not only to the student but also to the practitioner who wishes to understand the elements of a very difficult subject. The book has a few diagrams and illustrations. We venture to think that the former would be more useful if they had a more complete description.

Monopolies by Patents and the Statutable Remedies available to the Public. By J. W. GORDON, of the Middle Temple, Barrister-at-Law. London: Stevens and Sons, Limited. 1897.

IN this work the author reviews the origin and growth of what is known as "Patent law" from the point of view of those against whom monopolies may in its name be wrongfully claimed and discusses the remedies provided. Medical men should find themselves in sympathy with Mr. Gordon, belonging as they do to a profession that has ever set its face against "monopoly" and claimed the fullest publicity and widest use for whatever benefits its members may have been able to confer on mankind. To readers who are not students of law or history it may be new that the original object of patent legislation was to crystallise legal principles that *forbade* the granting of monopolies by the Crown and to throw open rather than restrict trade and manufacture, while inventors were incidentally protected for a limited time and to a limited degree by sections specially passed on their behalf, such protection being granted to them on the one ground only that such encouragement to them would be for the public benefit, while it was further recognised that the creating of a monopoly in something hitherto unknown would not deprive those excluded from it of any right which they previously possessed.

For the benefit of those who care to study the subject in detail we may say that the book under review, while it should form a text-book for lawyers unequalled in the particular branch of Patent Law with which it deals so exhaustively, comprises matter such as is usually omitted in typical legal text-books, and is, moreover, written in a style calculated to interest the reader of intelligence desirous of studying in a concrete instance the principles from which laws proceed and the processes which govern their growth. We should mention particularly in this connexion the critical editing of the famous case of monopolies, with an interesting note on the personality of Fuller, of counsel for the defendant therein, whose speech has been cited as the judgment of the Court, the facsimile reproduction of King James I.'s Book of Bounty and some portions of the speculative dissertation which calls attention to the hitherto unused fourth section of the Statute of Monopolies. Whether this section will ever be exhumed and find a practical field of usefulness we are not prepared to prophesy, but we may point out that an equally untried remedy, much dwelt on by the author, that contained in the twenty-second section of the Patents Act of 1883, is even now apparently, if rumour is correct, being had recourse to with a view to breaking down a system of exclusive dealing instituted in connexion with the cycle trade. Whether, if this be so, it is a coincidence or whether we can compliment Mr. Gordon on having helped to set the machinery referred to in motion we are not aware.

JOURNALS AND REVIEWS.

The Journal of Pathology and Bacteriology. Vol. V. No. 1. January, 1898. Edinburgh and London: Young J. Pentland. Price, 12s net.—This high-class periodical enters on its fifth year of existence with a varied list of contents and an abundance of illustrations. Dr. B. Roncali, of Rome, describes and figures appearances in the cells of certain malignant growths which he avers are of the nature of blastomycetes and not of "coccidia" as stated by others. He thinks that the parasitic nature of malignant tumours is indisputable and that the frequent failures in the recognition of the parasites or their being mistaken for cellular products is due partly to their limited number and partly to the degenerative changes they rapidly undergo. Dr. J. W. Eyre and Dr. J. W. Washbourn make a further communication upon the Pneumococcus in which they describe experimental researches testing the virulence of cultures, the protective and agglutinative powers of sera, &c. Mr. Walter Edmunds describes further Observations and Experiments on the Pathology of Graves's Disease, from which he concludes that the thyroid enlargement in that affection is of the nature of a compensating hypertrophy and that the parathyroids of dogs (which cannot by compensating hypertrophy pass into thyroid tissue proper) have as much, if not more, to do with preserving them from acute myxœdema than has the thyroid itself. There are several papers in the number which also appear in the Transactions of the Pathological Society of London, notably those by Mr. Shattock, Dr. Parkes Weber, Dr. Kanthack, Mr. T. Strangeways Pigg, Dr. G. Bellingham Smith, and Dr. Washbourn. Dr. R. A. Bolam describes Antral Carcinoma, Dr. F. Villy gives an account of the Bone Marrow in Cancer Patients, Dr. Misick (of Chicago) relates a case of Teratoma Hepatis, and Dr. Bertram Rogers one of Agnathia or Congenital Absence of the Lower Jaw.

St. Thomas's Hospital Gazette.—The first article in the second issue for the present year is a very readable account of the author's experiences of "Pioneering in Angoniland." An abstract of a paper read before the St. Thomas's Hospital Medical and Physical Society on Feb. 10th by Mr. Corner on the Comparison of Fractures and Dislocations in Man and Animals incidentally contains a suggestion as to the origin of the name "os sacrum." The "Hudibras" of Butler contains the following:—

> "The learned Rabbins of the Jews
> Write there's a bone, which they call Luz,
> I' the rump of man, of such virtue
> No force in nature can do hurt to.
> * * * * * * *
> From whence the learned sons of Art
> Os sacrum justly call the part."

St. Mary's Hospital Gazette.—The February issue of this journal contains among other interesting matter, including an account of the new buildings at St. Mary's Hospital, a clinical lecture on Prevalent Fallacies in the Diagnosis and Treatment of Certain Minor Disorders of Childhood by Dr. W. B. Cheadle. On the subject of Night Terrors, which are often a source of anxiety to parents and of worry and vexation to the medical attendant, Dr. Cheadle gives some practical hints.

The London Hospital Gazette for February opens with some editorial remarks upon the new medical school and other buildings now in course of erection. "A Visit to some of the Hospitals of Paris" will be read with interest. A very good reproduction of a portrait of Dr. A. Ernest Sansom, physician to the hospital, is presented with this issue of the *Gazette*.

St. Bartholomew's Hospital Journal.—The leading article in the February number draws attention to a defect in the working of the Act dealing with the compulsory notification of infectious diseases and suggests that the game of "bilking" the medical man of his fees as played by some vestries might come to a speedy termination if the resident staffs of hospitals "should insist that the fees be paid to some person at the hospital responsible for their distribution."

The Ophthalmic Review. Edited by PRIESTLEY SMITH, J. B. LAWFORD and others. London: J. & A. Churchill. Vol. xvii. No. 195. January, 1898.—This number contains the report of a case of upward coloboma of the iris associated with subluxation of the lens downwards by Angus McGillivray and good reviews of Fromaget and

Bordier on Visual Acuity and Amplitude of Accommodation; a paper by A. Terson on Partial Atrophy of the Optic Nerves following an extensive burn; and one by S. Baudry, on a New and Certain Method of producing Monocular Diplopia by means of a simple prism and its application in pretended blindness of one eye; and O. Lange writes on the Anatomy and Pathogeny of Unilateral Congenital Microphthalmos. There is also a report of the meeting of the Ophthalmological Section of the College of Physicans of Philadelphia.

Janus: Archives Internationales pour l'Histoire de la Médecine et pour la Géographie Médicale. Directeur, Dr. H. F. A. PEYPERS. Nov.-Dec., 1897. London: Williams and Norgate. Deuxième année, Livraison 3.—The interesting subjects discussed in the present number of this journal in different languages are as follow:—In English, the Introduction of Vaccination to the Southern Continent of America and to the Philippine Islands, by Dr. George Foy; and Outlines of the History of Diphtheria in Denmark and Germany, by Dr. J. Carlsen. In French, L'Impaludisme à Bornéo (Paludism in Borneo), by Dr. A. W. Nieuwenhuis; and Variations in the Composition of the Air in Intertropical Regions in their Relations to the General Pathology of these Districts, by Dr. Georges Treille. In German, Die Krankheiten eines Bergvolkes der Insel Java (The Diseases of a Mountain Tribe in Java), by Dr. J. H. F. Kohlbrugge, of Tosari; and Betrachtungen und Nachrichten über thierische Pfeilgifte (Observations on Arrow Poisons), by Dr. Ed. Schaer.

The *Journal of Physiology*. Edited by MICHAEL FOSTER, M.D. Lond., F.R.S., and J. N. LANGLEY, Sc.D., F.R.S. Vol. XXII., No. 4. London: C. J. Clay and Sons. 1898. Price 7*s*.—This part contains nine original articles, together with the proceedings of three meetings of the Physiological Society. The original articles are the following:—1. The Vaso-constrictor Fibres of the Great Auricular Nerve in the Rabbit, by Mr. W. M. Fletcher. The experiments of Mr. Fletcher have led him to endorse the statement of Professor Schiff that ten days after the extirpation of the superior cervical ganglion with the upper part of the cervical sympathetic stimulation of the great auricular nerve causes exactly the same vaso-constriction as before the operation; hence Mr. Fletcher concludes, with Professor Schiff, that extirpation of the superior cervical ganglion does not cause degeneration of the vaso-motor fibres of the great auricular nerve, and he further finds that in the rabbit section of the third cervical nerve outside the vertebral canal completely abolishes the effect of stimulating the thoracic sympathetic or the ganglion stellatum; hence in this animal the ramus vertebralis of the ganglion stellatum contains vaso-motor fibres which pass to the ears by way of the third cervical nerve and the great auricular nerve. 2. The Cortical Motor Centres of the Opossum (Didelphys Virginiana), by Dr. R. H. Cunningham. The author compares the locations of the various excitable cortical centres in the hedgehog and opossum and has satisfied himself that the cortical centres of the marsupial opossum are on the whole not so well organised as those of the insectivorous hedgehog. 3. Further Observations upon the General Physiological Effects of Extracts of the Suprarenal Capsules, by Dr. Swale Vincent. The experiments recorded show in dogs increased muscular activity, tremors, and paresis ending in paralysis. Other symptoms are thirst and abundant micturition and sometimes vomiting. 4. A Comparison of the Physiological Actions and Chemical Constitution of Piperidine, Coniine, and Nicotine, by Mr. B. Moore and Mr. R. Row, with five figures in the text. 5. Preliminary Note on Certain Undescribed Features in the Secretory Function of the Uterus and Fallopian Tubes in the Human Subject and in some of the Mammalia, by Mr. C. J. Bond. 6. A Contribution to the Chemistry of Hæmoglobin and its Immediate Derivatives, by Dr. John Haldane. 7. The Influence of Pathological Conditions on Active Absorption of Oxygen by the Lungs, by Dr. J. Lorrain Smith. 8. Decerebrate Rigidity and Reflex Coördination of Movements, by Dr. C. S. Sherrington. Drawings are appended to this paper, showing the positions assumed by animals after the operation of total or partial removal of the brain. 9. The Physiology of the Salmon in Fresh Water, by Dr. F. D. Boyd, Dr. James C. Dunlop, Dr. A. Lockhart Gillespie, Dr. G. Lovell Gulland, Dr. E. D. W. Greig, Mr. S. C. Mahalanobis, Mr. M. J. Newbigin, and Dr. D. Noel Paton. This is a long and interesting article.

Practitioner.—The Renal Origin of Gout and the Treatment of the Disease are the subjects of an article by Dr. A. P. Luff, who recommends the use of colchicum, guaiacum, laxatives, and citrate of potassium, together with spinach and similar green vegetables. Mr. H. G. Howse writes on Some Forms of Rectal Disease. Dr. G. B. Hunt has a paper on the Relapse of Typhoid Fever, a complication which he admits is still unexplained. Sir Dyce Duckworth recommends errhines—e.g., ordinary snuff or veratria snuff—as expectorants. The medico-literary causerie is on Sir Thomas Browne.

Edinburgh Medical Journal.—Dr. Alexander Morison publishes a further instalment of his Morison Lectures on Relation of the Nervous System to Disease and Disorder of the Viscera. The paper is mainly histological and is illustrated with numerous photo-micrographs. Dr. Frederick T. Roberts concludes his contributions on the Physical Examination of the Chest. He deprecates the use of graphic or recording instruments and expresses the conviction that too much reliance is often placed on the cardiac dulness in the investigation of cases. Mr. E. H. Fenwick describes Two Successful Operations for the Removal of Calculi lodged in the Lower Third of the Ureter. There are four other original papers.

Scottish Medical and Surgical Journal.—The opening article is a clinical lecture by Dr. Alexander James on the Etiology and Treatment of Phthisis; he has occasionally found some improvement to result from the use of tar water in one-ounce doses thrice daily after food. Dr. John Thomson contributes a copiously illustrated paper on the Diagnosis and Prognosis of Imbecility in Infancy. Dr. P. G Borrowman describes a fatal case of tetanus in which a quantity of Tizzoni's tetanus antitoxin equal to 117 gr. of the dried serum was administered in nine injections. Dr. Jessie Macgregor gives a long abstract of Marinesco's work on the Pathology of the Nerve Cell.

The *Guy's Hospital Gazette* for March gives an interesting account by Mr. H. Collier, entitled "A Year's Physic at Guy's." The figures for the year's antiseptics are, perhaps, the most striking and instructive; they include such enormous quantities — 7253 gallons of 2 per cent. solution of lysol and 4480 gallons of 1 in 20 solution of carbolic acid (i.e., about a ton of the pure acid); that expensive article, iodoform, reaches 84 lb., while boracic acid totals 15 cwt. Perchloride of mercury comes to 47 lb., but as 1 in 1000 is the ordinary solution this represents a considerable quantity. Anæsthetics include 480 lb. of chloroform, 584 lb. of ether, 11,000 gallons of nitrous oxide gas, and 16½ oz. of cocaine hydrochlorate. Among drugs we notice confection of senna, 224 lb.; sulphate of quinine, 450 oz.; iodide of potassium, 106 lb.; sal volatile, 1084 lb.; and there is a fine sound of nutrition in 5021 lb. of malt extract with 600 gallons of cod-liver oil. We learn also that surgical dressings cost more than £1500 and that they included 135,000 bandages and about thirty-five miles of various antiseptic gauzes. Finally, 73,742 prescriptions were dispensed for out-patients, while for in- and out-patients combined half a million pills, 50,000 lb. of ointments, nearly 400 gallons of tinctures and 150 gallons of syrups were manufactured, and some six miles of strapping plaster were spread. The article should be read by all interested in either figure or pharmacy.

THE LANCET.

LONDON: SATURDAY, MARCH 12, 1898.

THERE is a plethora of Midwives Registration Bills. Firstly, there is the Midwives Registration Bill now before Parliament. Secondly, a Bill for the Protection of Pregnant and Lying-in Women and Newly-born Children by Promoting the Better Training of Women as Obstetric Nurses and their Compulsory Registration as Such has been published by our contemporary, the *British Medical Journal*. This Bill has been prepared by a sub-committee of the Parliamentary Bills Committee of the British Medical Association and has been forwarded to members of the Council of the Association for consideration prior to their next meeting. Thirdly, we have before us the draft of a "Sick and Obstetric Nurses Bill," which has been prepared by Dr. ALEXANDER MCCOOK WEIR, of East Sheen. The preamble of this Bill asserts that "it is expedient to abolish the practice of midwifery by ignorant and incompetent persons calling themselves midwives and to protect poor parturient women and their infants from such persons, and to make better provision for the nursing of the sick and parturient poor and their children in England and Wales." Such a variously promoted group of measures may be taken as proof that poor pregnant or parturient women have much to be protected from. Their high rate of mortality has been guessed at and possibly exaggerated but no one denies the obvious risk to which they are exposed in the ignorance and the dirtiness of the midwives who, according to rough statistics, attend some hundreds of thousands of cases every year. Childbirth in civilised life is full of pain and even of peril, for which remedies must be found, and for the finding of which the medical profession is very deeply responsible. We are aware that there are some members of the profession who are quite prepared to let things remain as they are, not from any want of humanity, but from a belief that in some way the work is now done and that when situations become very dangerous the midwife sends for the medical man. The present situation they argue is tolerable and its evils are magnified by report; while under the *régime* of registered midwives they fear that midwifery as a science and an art will degenerate, not being kept up to the standard of the other great branches of practice—medicine and surgery. We recognise the truth of much of this, but the cry for protection of poor parturient women cannot go unheard.

There are wide divergences of suggestion in the three Midwives Registration Bills to which we have alluded. The first prohibits the use of any title signifying registration as a midwife on the part of those who are not registered and makes registration depend on certain training or standing as a midwife. The other two impose penalties in the shape of fines on unregistered women who habitually or for gain attend women during labour. The Bill of the Sub-committee of the British Medical Association makes the fine £5 for habitually and for gain attending lying-in women. Dr. WEIR would make it unlawful for any person (*male* or female) to assume the title of midwife, "or to practise as such for gain or otherwise," without the supervision and control of a fully-qualified and registered medical practitioner, and any person infringing this provision and neglecting to send for medical or surgical aid at a confinement shall be liable to a fine of £10 or in default imprisonment for a month. Mr. J. B. BALFOUR'S Bill provides a Midwives' Board composed of twelve registered practitioners, three elected by each of the three London medical corporations and three by the Incorporated Midwives' Institute. Besides these six members are to be nominated by the LORD PRESIDENT of the Privy Council. The Bill of the Sub-committee of the British Medical Association provides a board of twenty-four registered medical practitioners, to be appointed by the General Medical Council from, and so as to be representative of, the various districts of England and Wales. This board is to have very important functions. It has to frame rules for the training and examination of midwives and regulations for their conduct. By Mr. BALFOUR'S Bill these rules have to be subject to the approval of the General Medical Council; by the Bill of the Sub-committee of the British Medical Association they would be subject to that of the Privy Council. But in many other ways the Bills run on similar broad lines, so that we cannot think it would be difficult for their respective promoters to come to an agreement on the question. The vital point to be secured in any legislation is the effectual supervision of the medical profession over the practice of any midwives or midwifery nurses who are to be registered under such Bills. Some clear clause securing that in the most explicit terms should be inserted in the Bill itself. There is reason to believe that the promoters of Mr. BALFOUR'S Bill would not object to some such clause. Such a clause would go largely to meet our demands made on Feb. 19th and would still leave very useful and considerable functions to the Midwives' Board. But we would appeal to the promoters of the Bill before Parliament and referred by the Privy Council to the General Medical Council for its consideration to think over the constitution of their Midwives' Board. Three years ago this Board consisted of twelve registered practitioners. Now for some strange reason it is proposed to import "six persons" who are to be appointed by the LORD PRESIDENT and who may be laymen.

The Board should not exceed twelve persons, who should be registered medical practitioners elected partly by the General Medical Council and partly by the Corporations. Provided a clause is inserted in the Bill securing in a practical and fair way the supervision of registered medical practitioners over midwives in all parts of the country we are prepared to leave many details and the machinery of such supervision to the Midwives' Board constituted in such a manner and the rules and regulations of which shall be subject to the approval of the General Medical Council, not of the Privy Council, which cannot know things practically. One other point should be made clear in the Bill by Parliament—that is,

that the midwife or midwifery nurse shall have no power to sign certificates of stillbirths, but that in all such cases a medical man shall be consulted. The letter of Mr. WIGHAM, which we publish to-day, deals in no captious spirit with the letters of Mr. ROWLAND HUMPHREYS and Mr. JOHNSTONE, M.P., in THE LANCET of Feb. 26th, the reasonableness of which, so far as they go, we also recognise. It shows the serious necessity for amendments which, after the contemplated legislation, will not leave the race of "Gamps" still free to "practise for gain" with the same deadly consequences as at present. Neither Mr. HUMPHREYS nor Mr. JOHNSTONE will expect the medical profession to acquiesce in legislation which will not cure the evils which are its only justification.

THE paper read by Surgeon-Captain ROGERS at the meeting of the Epidemiological Society, held on Feb. 18th, forms an interesting supplement to the paper read by Dr. CHILDS at the preceding meeting. Both dealt with the bearing of movements of ground-water upon the genesis and propagation of disease, the earlier paper treating of enteric fever in a temperate climate and the latter paper of malarial diseases in India. No disease has been more extensively studied for a longer period of time than malaria. It produces a higher contribution to the death-roll of humanity than any other single disease; and yet if we read the article on Malarial Diseases in HIRSCH'S classical work and then Surgeon-Captain ROGERS'S recent contribution to the subject we are impressed with the lamentable deficiency of exact knowledge which is still manifest notwithstanding all the industry of innumerable observers in the past fifty years. Much of this barrenness of result is due to the lack of organised coöperation and collaboration by observers at different Indian stations and at malarial spots in other parts of the world. Still more of the same barrenness of result is due to the fact that observations once started (as, for instance, on meteorological conditions and still more on ground-water levels) have not been continued for a sufficiently long series of years to develop their full value.

Holding these views we are glad to welcome Surgeon-Captain ROGERS'S valuable contribution on the subject. His observations have unfortunately not been continued over many years, but it is sincerely to be hoped that they will not be allowed to cease now that they are once started. They deal with the prevalence of malarial fevers in the dry district of Chota Nagpur. It is too commonly assumed that in malarial countries the disease is associated only, or at least chiefly, with swampy and with low-lying districts. Its endemic occurrence on the tableland of the Deccan, of which Chota Nagpur forms a mountainous portion, is a sufficient refutation of this supposition. At Doranda in this district Surgeon-Captain ROGERS was in charge of four hundred soldiers. The level of the ground-water was taken twice a week in three wells which immediately surrounded the lines and the mean of these three levels was taken to represent the level of the ground-water. The fever season is the rainy season, which lasts from the middle of June to the middle of October, more than 80 per cent. of the yearly fever cases occurring during this period. The fever did not, however, begin with the rain, but only began to increase (from six cases in the whole of the previous month to fifteen cases in the week) when the continuance of heavy rains had raised the ground-water level from 28 ft. to 16·5 ft. from the surface. With further rises of the ground-water the daily admissions for fever still further increased, while subsequently the fever ceased when the water had receded to 17 ft. In the following year a similar sequence of events was observed.

A comparison of the monthly fever-rate and the monthly rainfall over a series of ten consecutive years at the same station brings out the same points, the fever not increasing to any extent until a month after the beginning of the rainy season. Furthermore, in exceptionally wet years the fever was unusually great and in years of deficient rainfall the fever-rate was also very low. The year 1892 was remarkable for an almost complete absence of the usual increase of fever in the rainy season. If a causative relationship is to be considered as existing between the prevalence of fever caused by the operation of rainfall in raising the ground-water and driving the specifically polluted ground air in piston-like fashion into the men's quarters, this exceptional year must be regarded as a crucial test of the relationship. Surgeon-Captain ROGERS shows how the events of this year fit into the general rule for three reasons. There was exceptionally little rain in the early months of the year and the rainfall of 1891 had been unusually little in amount and short in duration. Furthermore the rainfall of 1892 itself was not only below the average but was so evenly distributed that less than 12 in. fell in any one month. The coöperation of these different factors must have caused the ground-water to remain at a level too low to permit of the expulsion of the specific miasma from the soil. Assuming that during the wet season the cases of fever are caused by the driving of the malarial organism out of the soil and its subsequent reception by the soldiers (by what means this is effected is still unknown), it is evident that the cases occurring at the end of the wet season and during the subsequent dry season must have a different origin. During the first half of 1893 (the dry season) there was more rain than usual, but very little fever; in the same months of 1889 there was very little rain and considerable fever. Surgeon-Captain ROGERS is of opinion from the above facts, and from the further fact that during these months the water-level is always from 25 to 35 ft. below the surface, that there can be no connexion between the contemporaneous rainfall and fever cases in the dry months. It is otherwise, if the cases of fever in the dry season are compared with the rainfall of the preceding wet season, a definite proportion existing between these two. The cases of fever under the latter conditions are compared by Surgeon-Captain ROGERS with those occurring in the water-logged regions of the Gangetic delta, "where the infection takes place by the organisms being carried up into the air by evaporation of moisture from the soil." It is more than doubtful whether the quiet evaporation of moisture ever carries with it solid particulate matter such as infective material must be. But while doubt may exist as to the particular mechanism there is no reason to doubt the possibility of malaria

soil—rapidly converted into dust by tropical heat—being conveyed directly into the system by the respiratory tract or through the agency of food. We cannot agree, moreover, with the suggestion thrown out that "if malarial fever may be contracted by the inhalation of the malarial organisms, why should they not be also breathed out again?" This simple theory is advanced as a more likely hypothesis than the more elaborate mosquito theory. Assuming that the plasmodium malariæ is the specific infective agent it seems to us that such elimination of the infective matter by the lungs is even more unlikely than that of the tubercle bacillus in a case in which there is tuberculous meningitis without any lesion of the lungs. The improbability is even greater than suggested in this comparison in view of the biological characters of the plasmodium and of the fact that it is lodged within the corpuscles of the blood.

Surgeon-Captain ROGERS appears to us to have established the fact that there is a causative relationship between certain movements and levels of the ground-water and the incidence of malaria. The mere coincidence of the two events does not prove this, though if this coincidence recurs without a break it would be justifiable to advance the supposition that the phenomena stand in the position of cause and effect. But, as already shown, the method of *concomitant variations* has been applied, indicating that exceptional circumstances as to position and movements of ground-water cause corresponding variations in the amount and duration of the outbreaks of fever. We may draw attention to a practical point arising out of the observations at Doranda in Chota Nagpur. At the very time that the ground-water had risen to within 5 ft. of the surface of the ground in the lines occupied by the regiment *it was 25 ft. down only 200 yards away*, the great rise under the lines being undoubtedly caused by a road along one side of the area which materially interfered with the flow of the surface water from it. Had the regiment been lodged on the neighbouring ground where the water was always 25 ft. or more below the surface it is almost certain that a large amount of suffering to troops and of loss of public money might have been avoided. When will the Indian Government and its advisers learn that money spent on systematic scientific inquiry will more than repay them in improved efficiency of, and diminished expenditure upon, their troops, and that at the same time the knowledge gained must have a gigantic influence for good upon the vast native and civilian population of India?

A STRONG Departmental Committee of the Education Department, including Dr. SHUTTLEWORTH and Dr. W. R. SMITH, under the chairmanship of Mr. SHARPE, Senior Chief Inspector of Schools, which was appointed to inquire into the provision of education for feeble-minded and epileptic children, has just presented its unanimous report in which are a number of recommendations of great importance to the public and to the medical profession. Between the imbecile child on the one hand and the normal child on the other is a large class (estimated to be 1 per cent. of those attending the elementary schools) who are feeble-minded and unable to be educated abreast of other children. For this class "special classes" have been instituted in London, Nottingham, Bradford, and other large towns, and the experience of the working of these is so satisfactory that the committee recommend their adoption throughout the country. They recommend that attendance at these schools should be compulsory and that the school authorities should provide for conveying the children to and from school or for boarding them out in the neighbourhood when necessary. With regard to epileptic children they recommend—we think wisely—that there is no sufficient reason for separating epileptic children who do not show any mental defect from ordinary children, but that special provision should be made for those who show mental deterioration. These should be placed in special homes where their health could be cared for and education given suitable to their capacity. These homes might either be provided by the school authorities or the children might be sent to some other homes for epileptics and maintained there out of public money, a proceeding already legalised for deaf and blind children. These recommendations will require legislative measures before they can be carried out.

Other and no less urgent recommendations of the committee, however, do not give rise to the same necessity for new legislation, and the most important of these have reference to the discrimination between the educable and non-educable children and between the educable children who can go to the ordinary schools and those who require to be sent to the special classes. This work of discrimination should certainly be done by a medical man. But it is most desirable that the medical examination should be conducted and the separation into classes effected on some uniform plan, and the committee strongly recommend the appointment of an official medical adviser to the Education Department who should direct what steps should be taken to decide which children are defective or epileptic and on what grounds homes should be certified for the reception of epileptic or defective children. In cases of difference of opinion between the scholastic and medical authorities the question could be referred to this adviser, whose decision should be final. The proposal to establish a medical adviser to the Education Department is one which we hope will be carried out without delay. In addition to these very important questions with regard to defective children there are many others dealing with the health of school children, such as certification by outside medical men, on which it is most important that there should be representation at the Education Office of the views of the medical profession, which at present are often ignored. There will be little difference of opinion as to the desirability of having special schools for the feeble-minded in large towns, but in country districts where the population is scattered there will have to be a central school for each district, and it is intended that those children who live at a distance shall be taken from their homes and compulsorily boarded-out in the neighbourhood of the school. For so strong a measure public opinion is hardly yet ripe and it would be wiser to begin with the towns first.

The class with which this report deals is a large and, it

would appear, an increasing one. If some provision is not made for the education of these children, at a later period they will be unable to obtain occupation and will either become a constant burden on the rates or will drift into the criminal classes. Although, as we have hinted, some of the recommendations are rather too bold for adoption at present, we hope that the report will result in a great extension of the work which has already been done in London and elsewhere in special training of defective and epileptic children, and that no time will be lost in appointing a medical adviser who shall decide on the exact methods to be adopted in carrying out the recommendations of the committee, and who shall be a permanent official of the Department.

Annotations.

"Ne quid nimis."

LONDON UNIVERSITY COMMISSION BILL.

THE second reading of this Bill was moved by the Duke of Devonshire in the House of Lords on March 4th, and supported by Lord Herschell and Lord Reay. The Duke of Devonshire enlarged on the representative character of the deputation which had lately waited on him and had pressed on him the urgency of the question. The most important statement in his speech was the following: "I am inclined to believe that such opposition as exists to the proposals of the Commission as embodied in this Bill proceeds from a certain number of gentlemen—whether many or few I do not know—who have taken their degrees at London University at remote periods or who have not been directly brought into contact with university teaching, or who have not been able to obtain much knowledge of the progress made in university teaching either in London or elsewhere, and who entertain some vague and, I think, utterly groundless suspicion that any change in the constitution of the University will, in some way, tend to disparage the value of the distinction which they obtained formerly and of which they are still justly proud." Surely the Government will not allow an opposition thus described to defeat the Bill. The Bill will probably not be introduced into the House of Commons, where alone the strength of the opposition can be estimated, until after the passing of the Irish Local Government Bill.

INQUESTS WITHOUT MEDICAL EVIDENCE.

THE practice of coroners holding inquests and of juries giving verdicts without any medical evidence being called seems to be upon the increase and a very notable instance has just occurred at St. Helen's. The inquest was held by the county coroner, Mr. S. Brighouse, on March 2nd, to inquire into the death of John Rattigan, aged forty years. On Feb. 27th Rattigan was kicked in the "stomach" by a horse. He was seen by Mr. O'Keeffe, who is reported as saying that he would be all right next morning, and he was then taken to the Providence Hospital, where he died on the morning of Feb. 28th. The cook to the hospital deposed that he was with Rattigan when he died, which was about midday on Feb. 28th, and that he was present because the sisters asked him to be so. A juror remarked that e thought they ought to have some medical evidence and the coroner said, "I think the jury will agree with me that we might have some more evidence from the hospital as to what medical attention, if any, he received from the time of his admission up to the time of his death. At Bootle, where I hold a great many inquests, and at other places, the nurse who attends a patient and who was present at death comes before us to describe his illness and sufferings and to give any other evidence that may be required. That would be far more satisfactory here than sending the cook." The jury returned a verdict of "Accidental death," but added that they were not satisfied with the evidence from the hospital. The Providence Hospital certainly seems to be conducted in a remarkable manner, but if we may judge by the coroner's remarks it does not stand alone among Lancashire hospitals. What evidence was there that this unfortunate man died from the injury caused by the horse? And why do the hospital authorities of Lancashire delegate the duty of giving medical evidence to those who are not qualified to give it?

MR. ALFRED RUSSEL WALLACE AND THE MEDICAL PROFESSION.

MR. WALLACE, despite the manner in which at different times he has suffered pulverisation at the hands of Dr. McVail, and in his cross-examination before the Royal Commission on Vaccination, has written yet another pamphlet, in which, under the title of "Vaccination a Delusion; its Penal Enforcement a Crime," he reiterates all his old arguments, all his old fallacies, and, be it added, all his old sins of omission. On this occasion he takes up an altogether independent attitude and he "appeals from the medical and official apologists of vaccination to the intelligence and common-sense of his fellow countrymen." So strong, indeed, seems his bias against the profession as a whole that he has, we infer, not even condescended to seek the most elementary assistance of those members of it whose names are household words amongst the anti-vaccinationists, and alone he sets forth to tread the thorny paths of medical science. Before the bottom of the very first page is reached a serious calamity befalls him and he tells his "fellow-countrymen" that typhus (obviously not a misprint for "typhoid") fever is believed to be communicated by specifically contaminated water. Surely after this we see why he deemed it inexpedient to appeal to the medical profession. In the next page or two Mr. Wallace flounders badly and under the heading of "Vaccination and the Medical Profession" he urges the old but obviously illogical argument that "as the profession has a pecuniary interest in perpetuating vaccination it can form no unbiased opinion upon the value of the operation." Can the author support this charge against the profession? Would nothing accrue to it if vaccination were abolished and small-pox substituted, as the medical profession believes it undoubtedly would be, in its stead Would not the treatment of one case of small-pox for, say, three weeks more than counterbalance in a pecuniary sense the vaccination of many children? What, too, has Mr. Wallace to say as to the action of the medical profession as a whole in promoting in such an obviously self-denying fashion the growth of sanitary reform, which has done so much, according to the anti-vaccinationists, to check small-pox? Will he charge the profession with obstructing sanitary progress and with specifically polluting water-supplies in order that typhus (!) fever may flourish? But we cannot, Mr. Wallace tells us, even count properly. There is much evidence, he says, to show that "doctors are bad statisticians and have a special faculty for mistaking figures" — and he implies that his own mental processes are in an altogether peculiar degree fitted for accurate statistical research. Let us verify this implication by reference to the evidence given by Mr. Wallace before the Royal Commission, noting, by the way, that at his first interview he committed

so many errors that he asked to be allowed a second interview in order to correct and amplify some of his statements. His final leave-taking of the Commission may therefore be regarded as his ripened judgment and the acme of his knowledge upon all points relating to vaccination. It is generally accepted that the evidence with regard to small-pox and vaccination as illustrated in our small-pox hospitals is at least of some value, but Mr. Wallace seems to think such a study, to say the least of it, inconvenient. Here is a question put to Mr. Wallace by the Chairman on the occasion of his first examination:—

(Q. 7069.) "Have you examined the statistics with regard to the Metropolitan Asylum Board's hospitals?" (A.) "I have not paid much attention to them."

Similarly upon his second visit to the Commission, when he returned especially to supplement his evidence he was asked by Sir William Savory—

(Q. 9729.) "Have you gone into the question of the Fever Hospital?" (A.) "I daresay it would be instructive, but as I say, the subject would be so tremendously vast, and the time required to hunt up evidence would be so enormous, that unless one lived in London one could not do it; and I live 120 miles away."

(Q. 9730.) "But you have made your reputation by thoroughly sifting evidence before you came to a conclusion?" (A.) "Some kind of evidence."

Does this mean that it is Mr. Wallace's custom to omit such evidence as tells against any thesis he may be interested in developing? All Mr. Wallace's evidence may be found in the third report of the Commission and we commend it to our readers. They will then understand why Mr. Wallace speaks of the report as a "feeble report," and why vaccination "never saved a single life." It is narrated in Sir John Simon's "Papers Relating to the History and Practice of Vaccination" that a certain Prince Kaunitz forbade two words to be uttered in his presence: the one was "small-pox" and the other "death." We expect Mr. Wallace's best friends omit all reference to Dr. McVail or to the Royal Commission on Vaccination when in the presence of this distinguished expert on inductive and deductive methods.

WATER-BORNE ENTERIC FEVER AT ILLOGAN.

DR. A. E. PERMEWAN, the medical officer of health of the Redruth rural district, has recently issued a concise report upon an outbreak of enteric fever at Illogan, and the condition of affairs revealed is such as to make us ask why these things have been allowed to continue until an epidemic brought them into public notice. The infected water was supplied by the Camborne Water Company, who have, it appears, two sources of supply—one at Curgenwyn and the other at Boswyn—while a common main conveys the water to Illogan and to Camborne, at which latter place there was a severe outbreak of enteric fever simultaneously with that at Illogan. The Curgenwyn water is collected into three storage reservoirs which are fed from a spring in the hill above. Reservoirs Nos. 2 and 3 are, we are told, properly protected against pollution, but No. 1 reservoir, which is the lowest and through which the water from Nos. 2 and 3 has to pass before it reaches the main, is apparently liable to be specifically polluted at any moment by means of the drainage from Curgenwyn entering the leat which conveys the water from the spring to the reservoir. How long this evil has been seen we are not told. The state of affairs at the Boswyn source of supply was, unfortunately, no better. Here water is stored in an open cemented tank fed by means of a pipe from some deep springs near. By the side of the tank there runs a stream which carries off the surface water from the watershed, and which water was, as occasion required, turned into the tank by means of a arranged for the purpose. At one of the cottages in this catchment area there is no closet whatever and excrement is thrown round about on the surface of the ground. Close to this cottage is a pool of stagnant water into which heavy rains wash the excrement referred to and from which in times of storm there runs a rivulet which enters the stream passing, and at times partly supplying, the Boswyn tank. The rest of the story is simplicity itself. In October and November three cases of enteric fever occurred at the cottage on the pool; the excrement was deposited round about, was washed into the pool, and so eventually into the Boswyn tank. In Camborne and Illogan enteric fever—obviously water-borne—soon appeared; the stream water was intercepted, the Boswyn tank disused, and the fever ceased. Now the "water company is taking steps to prevent any further pollution of their service." Into the outbreak of enteric fever at Camborne Dr. Bruce Low has recently inquired and we shall doubtless soon have the pleasure of noticing one of his masterly reports with which we are now so familiar; we trust, too, that his report will contain a map of the district concerned. But how many other water companies have gathering grounds, springs, reservoirs, and other devices like unto this?

MEDICAL CORONERS.

AN election is about to be held for the office of coroner to the Stockton Ward of Stockton-on-Tees. Among the candidates is Mr. W. J. Beatty, L.R.C.P. Edin., &c. Another candidate is a lawyer. There can be, of course, no question as to which of these two gentlemen is the more suitable candidate for the office. A coroner should always be a medical man. Not only is it his duty to hold an inquest into the cause of death—a function essentially medical—but it also rests with him to decide whether a death is natural or unnatural, whether the cause of a sudden death is known or unknown, and whether a death has or has not been a violent one. Again, in the matter of viewing the body the coroner, if a medical man, may gain some valuable information from the mere appearances which the corpse presents—appearances which would be a sealed book to any but a medical man. A useless inquest is not only a travesty of law, but it inflicts unnecessary pain upon the relatives of the deceased and trouble upon the jurors which might well be spared. or all these reasons it is most desirable that the very responsible office of coroner should be held by a medical man and we most sincerely hope that the electors of the Stockton Ward will think so too.

HOSPITAL REFORM.

THE Bradford and District Medico-Ethical Society, a body which has done excellent work for the medical profession in fighting the Bradford School Board on the certificate question and in many other ways, has been moved by the recent occurrence of the annual meetings of subscribers to medical charities to make a pronouncement upon the question of hospital abuse. In a letter to the local press the society points out what cannot be too often pointed out, that nearly all hospitals give as reason for support the fact that the number of patients seeking relief increases year by year. This is a false argument, for "the largeness of the crowd in the hospitals is no indication whatever of the value of the work done by them." This, of course, is perfectly true, but the difficulty is to get the public to see it. An increase in the number of patients of a thousand or so a year and a certain amount of debt are the means by which an ordinary hospital lives—the debt especially is an excellent lever for extracting guineas from the charitable. And yet the Bradford society says the present incomes of the Bradford charities are

sufficient and even superabundant if only the suitable and really poor cases were treated. The society goes on to refer to the harm done by the penny-a-week system of subscriptions; from being a purely voluntary subscription this penny has come to be in many cases a compulsory one and is looked upon as giving to him who pays it an absolute right to treatment for any ailment, however trivial, and also the right to attend for any length of time. The Bradford society concludes by imploring the public to consider these matters. We only hope it will, and that not only in Bradford, for the reform of hospital abuse rests with the public more than with anybody else. The Hospital Reform Association has, we are glad to see, addressed a memorial to the Governors of the Cardiff Infirmary, whose annual meeting was held on Feb. 28th. This address lays stress upon the same points as those dealt with by the Bradford society and was, we trust, not without its due effect upon the minds of the Governors.

THE NOTIFICATION OF MEASLES AT BLACKPOOL.

SINCE as far back as the year 1879 measles has been notifiable in Blackpool and an epidemic of this disease during 1897 has led Dr. Jasper Anderson, the medical officer of health of the district, to compile an interesting report, which he has recently presented to his sanitary authority. It may be noted that Blackpool at the census of 1891 had a population of 23,846 and since that date it has materially increased. From 1880 the notifications of measles have been as under:—

—	Cases.	Deaths.
1880	119	3
1881	4	—
1882	266	17
1883	16	1
1884	68	2
1885	130	2
1886	233	10
1887	37	—
1888	88	5
1889	180	2
1890	173	8
1891	248	10
1892	43	—
1893	122	4
1894	320	6
1895	108	2
1896	147	4
1897 (to Sept. 4th) ...	732	22

It is, however, necessary to bear in mind in studying these figures that since 1891 more care has been taken by means of house-to-house inspection to discover cases of the disease in question. The epidemic of 1897 began, it seems, with imported cases, Blackpool as a resort of pleasure for a large and scattered population being especially liable to these introductions of disease from without. Measles when introduced soon spread and in the week ending April 17th no less than sixty-six cases were notified. On April 21st all the public elementary schools with one exception were closed, and a fortnight after this the week's notification fell to thirty-six, the numbers continuing to decrease until a localised outbreak caused a further rise. Dr. Anderson furnishes evidence to show that the scholars of different schools became infected one after another and the fact that "explosions" of the disease occurred in connexion with the scholars from particular schools supports a thesis that infection was actually contracted at school. The fatality-rate of those attacked during the first year of life was no less than 14·6 per cent., in the second year 11 per cent., in the third year 4·3 per cent., in the fourth year 1·2 per cent., and in the fifth, be it noted, 3·3 per cent. Above this age there was but one death and that in a pregnant woman, aged thirty years, who was confined on the fourth day of the disease. It is an interesting fact that the child was born with the eruption of measles and died when thirty hours old. When a case of measles is notified in Blackpool the measures taken are nearly identical with those practised in connexion with scarlet fever—i.e., the infected house is visited and isolation enjoined, and notices are sent to the schools if necessary, to the public library, and to the laundry involved. Memoranda are forwarded to the head of the house setting forth the penalties for the exposure of infected persons or things, and the precautions necessary to be taken when (*a*) the patient remains at home, and (*b*) the patient is removed to hospital. The school attendance officer is furnished with, and supplies, any necessary information, and when a fortnight from the onset of the rash has elapsed an inspector calls to ascertain if disinfection can be carried out. From among the 732 cases which occurred 64 were removed to hospital, there being out of these 64 patients but one death. In the invaded houses there were 833 children under fourteen years of age who were exposed to infection, and of this number 351 had previously suffered from the disease. Of the 482 children who had not before had measles 179 contracted the disease, while of the 351 who had previously been attacked only 17 became affected. Dr. Anderson considers that the methods of prevention adopted led to good results inasmuch as of the 482 children presumably susceptible to measles only 179 contracted the disease, or, as he expresses it, 303 children were prevented from developing measles. Perhaps, however, it would be more correct to say that the 303 children were shielded from the continued exposure to infection. The evidence that the fatality-rate of the disease was diminished by the efforts of the sanitary authority is very strong, as it appears that in the neighbouring town of Fleetwood with a population in 1891 of 9274, which was invaded simultaneously with Blackpool, there were during the second quarter of 1897 30 deaths from measles, whereas in Blackpool there were but 19 deaths. In Fleetwood there is no compulsory notification of this disease.

THE EFFECT OF STETHOSCOPIC PRESSURE IN PHYSICAL EXAMINATION.

IN the *New York Medical Journal*, Dec. 4th, 1897, Dr. Henry Sewall has called attention to the modifying effects of pressure on the sounds heard in the use of the binaural stethoscope and its value in the physical examination of the heart. It is strange that some of Dr. Sewall's observations with regard to an instrument in such constant and universal use have not been anticipated. The sounds heard in auscultation are made up of two elements—those emitted by the body which originates the vibrations and those which arise from resonance. If a watch be suspended in a small box from one of its sides and a binaural stethoscope passed lightly over the outer surface of that side the watch will be heard loudly everywhere, but if the bell is applied with increasing pressure the sound gradually dies out and usually fails except opposite the area of contact with the watch. But with the straight wooden stethoscope the effect of pressure is rather to increase the sound. The explanation of the difference is that sound is conducted by the stethoscope itself in the case of the wooden instrument and by the contained air in the binaural instrument. Pressure on the former has only the effect of increasing the contact of the rim, on the latter it damps the vibrations of the surface included by the border of

the bell which are the chief source of the sound conducted by the inclosed air. In the normal chest, pressure on the chest piece of the binaural stethoscope placed under the second right costal cartilage obliterates or reduces the second sound; at the apex the first sound is maintained, though altered in quality and diminished in intensity from obliteration of resonance tones. This observation is of practical importance, for a feeble contraction may give rise to a powerful resonance note when the fundamental tone of the thorax is a harmonic of the first sound, the elimination of which will enable a better idea to be formed of the energy of the heart. The outline of the heart may in many cases be determined with greater certainty by stethoscopic pressure than by other means, by noting the diminution of sounds when the border of the ventricle is passed; similarly the retention of sounds to the right of the sternum indicates close contact of the heart and enlargement of its right side. Dr. Sewall puts forward provisionally the following conclusions as to the results of pressure in the use of the stethoscope. Powerful basic systolic inorganic murmurs disappear. Aortic direct murmurs disappear at the apex, but the mitral direct is strongly preserved though it fails in its area of transmission towards the axilla. The presystolic and tricuspid regurgitant murmurs are well preserved. The aortic regurgitant murmur is annulled at the second right cartilage unless there is aneurysm or dilatation of the aorta, but is preserved at the apex. Pleural and pericardial friction sounds are intensified; this fact has proved useful in the analysis of the subcrepitant crackles so commonly found in pulmonary disease. Whatever may be the position of Dr. Sewall's conclusions in the future he has certainly done a service in calling attention to the subject if only by pointing out an unrecognised source of fallacy in the estimation of sounds.

THE HEAT OF THE INCANDESCENT ELECTRIC LAMP.

THE incandescent electric lamp is essentially a device which transforms electricity partly into light but mostly into heat. As is well known the carbon filament of the lamp is a substance offering great resistance to the passage of the current and the product of this resistance is light and heat. It is an instance of the translation of one form of energy into another. It may not, however, generally be known that the light produced is but after all only a small percentage of the energy thus manifested—some 5 or 6 per cent. only at the most. This fact is very important, bearing in mind a very common notion that the electric incandescent lamp is free from the heat rays. It is true that the lamp when working is not comparable with a flame or naked light, but at the same time the heat evolved is such as may lead to ignition. We are disposed to emphasise this point because the incandescent electric lamp is used for the purposes of illumination and decoration in shops without any regard to the possibility, nay, probability, of fancy goods being fired which happen to be contiguous. Indeed, so firm is the idea that the incandescent electric lamp is free from heat that it is frequently to be found buried in a mass of easily ignited and highly inflammable material. This is a mistake and care should be exercised with the electric lamp in its application in this connexion, but the risk, of course, is not so great as where naked lights are employed. We have found by experiment that on immersing a 16-candle power lamp (100 volts pressure) in half a pint of water the water boils within an hour and in proportionately less time when a 32-candle power lamp is substituted. If again the lamp be buried in cotton-wool the wool soon begins to scorch and ultimately to burst into flame. In one experiment which we tried the bursting into flame of the wool was accompanied by a loud report, due to the *implosion* of the lamp. It clearly appears from this that the incandescent electric lamp cannot be regarded as an unlikely means of starting a serious fire, and shopkeepers, especially those who exhibit highly inflammable fabrics, should know that there is risk in placing such goods too close to the lamp. The lamp in contact with celluloid fires it in less than five minutes and therefore the danger is particularly obvious in the case of toy-shops where electric incandescent lamps are often suspended in the midst of toy celluloid balls.

THE SALE OF CARBOLIC ACID.

LEGISLATION is at length to be directed to some restriction at any rate being placed upon the present indiscriminate sale of carbolic acid. It would appear from a reply given by the Home Secretary in the House of Commons on Tuesday that the Privy Council, while not thinking it expedient to include carbolic acid in the schedule of the Pharmacy Act, are of opinion that regulations should be made with regard to its sale and the sale of other poisonous substances, and in accordance with the promise given have prepared a Bill for the purpose which will shortly be introduced. Carbolic acid has only too frequently afforded an easy means of self-destruction and the number of cases of poisoning with this acid has increased alarmingly, as we have again and again pointed out, during the last few years. We hope that the Government will be expeditious in this matter in view of the great need there is for the passing of such a measure.

THE PLENUM SYSTEM OF VENTILATION APPLIED TO HOSPITALS IN HOT CLIMATES.

THE application of the plenum system of ventilation to hospitals in places where hot seasons are encountered, as in India, opens up some points of great interest to the profession. We have already described in some detail the system as applied to the Birmingham General Hospital.[1] The advantages of the system in this case were pointed out and the possibilities of the system being utilised for the cremation of infected out-going air were also indicated. The application, however, of the plenum system of ventilation to hospitals in hot climates seems to us to suggest further advantages, and the proposal to adopt the system at the new General Hospital for Europeans in Calcutta is, considering the unfavourable conditions of such a climate with respect to the nursing and recovery of patients, a step in the right direction. The plenum system as opposed to the extraction system affords a much better chance of controlling the conditions in regard to temperature and humidity of the air in the wards. In England the temperature aimed at is, of course, as far as possible a constant one, but obviously in the winter the in-going air must be warmed. In hot climates it will be possible to reverse this process—that is, to cool the air and at the same time to reduce the moisture when excessive. By one and the same process the cooling of the air and the reducing of its humidity are effected, and those who attend the sick in hot countries know the great boon which these conditions when secured must confer upon the patient. The new General Hospital in Calcutta is being built at an estimated cost of £120,000, and it is hoped that the building will be completed in about five years. It is proposed, as we have already indicated, that the hospital should be ventilated during the hot and rainy seasons by cooled and dried air. During these seasons Calcutta has a climate of which the chief features are a temperature varying from 85° to 95° F. and a humidity which frequently reaches 90 per cent. The supply of air under constant conditions in regard to temperature and humidity must minister largely

[1] THE LANCET, May 11th, 1895, p. 1203.

to the relief of patients suffering from cutaneous diseases and from an exhausted nervous system. Again, by this system the air is filtered and insect pests such as mosquitoes will be excluded. Punkahs can be dispensed with and patients under the salutary conditions of the air supplied to them will be free from excessive perspiration, from prickly heat, and from exposure to variations of temperature. This application of an artificial means of ventilating a hospital placed under widely divergent climatic conditions will be watched with interest, and we re inclined to think that the results will be satisfactory.

THE PHARMACY ACTS AMENDMENT BILL.

THE first object of this Bill is, as the memorandum states, "to render persons who have passed the first or preliminary examination required by the Pharmacy Acts, and who are consequently registered as 'apprentices or students,' eligible to become student-associates of the Pharmaceutical Society of Great Britain instead of students as heretofore." The majority of the students of the society were not educated in the society's school, and the term has been consequently, therefore, incorrect and misleading. Other objects are to render every person whose name appears on the Register of Chemists and Druggists eligible to become a member of the society, and to alter the existing conditions under which the council of the society is elected and constituted. Two-thirds of the persons entitled to keep open shop as chemists are ineligible to become members, and they consequently have no direct representation on the council of the society. By the third clause of the Amendment Bill it is enacted that "every person who at the time of the passing of this Act shall have been registered as a chemist and druggist, or who shall hereafter become registered as a chemist and druggist, shall be eligible to be elected a 'member' of the society according to the by-laws thereof."

CORONER'S INQUESTS IN LIVERPOOL IN 1897.

IN the return of inquests held before Mr. T. E. Sampson, coroner of Liverpool, during the year 1897 the total number of cases of death reported to, and investigated by, him amounted to 1666. In 633 cases inquests were deemed unnecessary. The total number of inquests held was 1033, including 640 males and 393 females. Of legitimate infants under one year there were 110 males and 98 females; and of one year and under seven years 59 males and 47 females. Of illegitimate infants (or unknown) under one year there were 7 males and 6 females; and of one year and under seven years only 1 female. Of children of seven years and under sixteen years there were 35 males and 17 females. Of youths of sixteen years and under twenty-five years there were 0 males and 16 females. Of adults of twenty-five years and under sixty years there were 294 males and 140 females. There were 85 males and 67 females of sixty years and upwards. In the case of one female the age was unknown. Post-mortem examinations were made by order of the coroner in 91 instances. Verdicts of murder were returned against 2 males and 1 female; and of manslaughter against 1 male and 6 females. 51 males and 22 females committed suicide whilst temporarily insane or otherwise. Verdicts of accidental death were returned in the cases of 243 males and 147 females. Injuries (causes unknown) accounted for the deaths of 25 males and 9 females. Of those suffocated whilst in bed with parents or otherwise there were 83 males and 83 females. Found drowned, there were 15 males and 8 females. Found dead (where the cause of death was unascertainable), there were 2 females. 129 males and 70 females died from excessive drinking. 2 males and 1 female died from disease aggravated by neglect by others. Want, cold, and exposure caused the death of 3 males. 1 male infant and 1 female infant died from want of attention at birth. 79 males and 40 females died from natural causes and 2 males and 2 females from other causes. 3 males and 1 female were stillborn. As regards newly-born infants 2 were males and 2 were females.

OUT-PATIENTS' INCONVENIENCES.

THERE can be no doubt that much of the inconvenience which besets the attendance of out-patients at the metropolitan hospitals is the necessary consequence of their number. We hear complaints that hours have been consumed in waiting, but the objectors are apt to forget that clinical examinations cannot be carried out by a glance or a dash of the pen. All avoidable delay should of course be prevented as much in the interest of the hospital and its officials as of patients who have ties of duty elsewhere. After every effort, however, enough time must be allowed for careful and efficient treatment. A contemporary reminds us of another and a somewhat serious inconvenience which constantly arises in this connexion—namely, that of waiting outside the hospital gate for admission to the waiting-room. This is a grievance which might as a rule be easily remedied by opening the gate half an hour or so earlier than is now customary. We are aware of no objection to such a course. An out-patient waiting-room is less vulnerable than almost any apartment and is not likely to receive any serious damage at the hands of its ailing frequenters. The experiment of earlier opening should certainly be tried and it is certain that the health of many patients would gain by this considerate reform.

PHARYNGEAL ABSCESS UNCONNECTED WITH SPINAL DISEASE.

IN the March number of the *Phonographic Record* Dr. James Adam draws attention to a little-known and seldom diagnosed condition which is most common, in his experience, in young children. Dr. Adam has seen three such cases of pharyngeal abscess and refers to the case of the child of a "well-known and brilliant surgeon," thought by the parent and those in attendance to be suffering from meningitis until the spontaneous rupture of a pharyngeal abscess revealed the nature of the case. The disease, says Dr. Adam, is very insidious and the signs of it have to be searched for. The child is not very ill; the mother says the patient seems occasionally to have some difficulty in swallowing or breathing. The respiratory difficulty is not marked, especially at first, and the attack may pass off. Although summoned urgently the practitioner may see little to excite alarm. There may be no difficulty of breathing; the child is pale rather than livid. There is probably a slight rise of temperature and there is a slight enlargement behind the angle of the jaw on one side. A closer examination of the mouth will reveal nothing. In every case where a child is suffering from subacute, subfebrile enlargement of glands at the angle of the jaw, where no cause can be found anterior to the pharynx, the pharynx ought to be inspected, or, if it cannot be seen, palpated with the finger inserted in the child's mouth. If an abscess is found a puncture with a guarded bistoury cures the case. Of the superiority of digital exploration over visual examination of the pharynx there can be little doubt. Had it been recognised and practised adenoid growths would have been known to the older generation of surgeons, whilst we know of the case of an elderly woman who went from one practitioner to another and was told by each that there was nothing serious the matter, until she fell into the hands of one who, struck by the persistency and evident sincerity of the woman's complaints about her throat, passed his finger

through her mouth and found the pharynx encroached upon by a mass of malignant disease bulging in the posterior wall. And yet to the eye the appearance of the throat suggested nothing abnormal.

THE HEALTH OF THE QUEEN.

WE are glad to be able to state that the Queen is in her usual health and leads her ordinary life. The fact that, notwithstanding the somewhat serious rumours which were prevalent, Her Majesty has been able, even in the present cold weather, to go out in an open carriage, should have been sufficient to allay any uneasiness in the public mind. The dissemination of incorrect and unauthorised reports regarding minor ailments is much to be regretted and may be the means of causing much harm and unnecessary anxiety.

MEDICAL OFFICERS AND BOARDS OF GUARDIANS: ANOTHER HARD CASE.

IN our issue of Feb. 19th, at page 522, we commented on the case of Wood *v.* The Stowmarket Guardians. We have since received particulars of another case in which the medical plaintiff was likewise non-suited in an equally legal and equally inequitable manner. The facts of the case are as follows. A tramp applied to Mr. Ord, of Mildenhall, Suffolk, for treatment. It was found that the tramp had a dislocated shoulder which Mr. Ord reduced, and then sent the tramp to the relieving officer for an order which he obtained and brought back to Mr. Ord. This occurred on Aug. 24th, 1894. Mr. Ord sent in his claim in September, but the guardians never answered in any way; they neither refused nor allowed the claim. After writing several letters Mr. Ord wrote to the Local Government Board and received an answer on May 24th, 1895. He brought his action in July, 1895, and naturally enough was non-suited on account of the time limit. As in Dr. Wood's case the latest date at which liability for payment ran was Dec. 29th. Both these gentlemen were non-suited strictly according to law, but we should very much like to know if there is no way of recovering the fees.

A STREET DANGER.

EVERYBODY knows how well the vehicular traffic of the City is managed and controlled by the police and the arduousness of their task increases day by day. This is a matter which largely affects the interests and well-being of the pedestrian public and therefore it is of the utmost importance that the police in carrying out their duty should not in any degree be handicapped. There is, however, a source of danger in certain parts of the metropolitan streets which the police cannot possibly avert. We allude to those crossings near to which a railway bridge is situated and over which there is considerable railway traffic. Let the case of Ludgate-circus be taken, for example. It is frequently necessary to stop at the foot of Ludgate-hill the traffic going westwards from the City to enable the traffic going north and south to pass. In our own experience, while the traffic thus going westwards happens to be stopped and the street is crowded with vehicles and horses a train passes over the railway bridge immediately above. Even if a whistle does not happen to be sounded there is a most distracting noise set up by the train passing over the bridge such as is admirably calculated to frighten a horse and to cause it to rear, "back," or "bolt." This may obviously lead to very serious results, and we remember on one occasion a policeman on duty being knocked down and seriously injured by the eccentricities of a horse thus startled. The chance of such an occurrence exists every day and it is possible for it to happen almost every five minutes. Cannot something be done to the permanent way of railways on railway bridges situated close to a congested line of street traffic so as to reduce such risks to a minimum? Surely engineering is not so far without resource and skill as to make the silencing of railway traffic in these particular localities impossible. We are certain that the police on duty at these points will agree with us as to the dangers to which a proximity of railway traffic in the way described exposes them and the public at large.

DEGENERATION OF THE SPINAL CORD IN LEUKÆMIA.

IN a recent number of the *Deutsche Zeitschrift für Nervenheilkunde*[1] Dr. Nonne, of Homburg, describes a condition which he found in two cases of leukæmia—viz., small patches of degeneration of parenchymatous character scattered over the surface of a spinal cord section. There was no affection of the grey matter or of the vessels. In one of the cases there was a slight sclerotic change in the posterior columns. There were apparently no nervous symptoms corresponding to these changes. In a succeeding number of the same periodical Professor Schultze, of Bonn, points out that as long ago as 1884 he had described changes identical with those mentioned by Dr. Nonne, as occurring not only in leukæmia but also in chronic nephritis. He also mentions that the degeneration of the posterior columns of the cord recently described in association with anæmia was long ago described by Simon as occurring in phthisis in the first and second volumes of the *Archiv für Psychiatrie*.

ANNUAL DINNER OF THE MEDICAL SOCIETY OF LONDON.

THE 125th anniversary dinner of the Medical Society of London was held at the Hôtel Métropole on March 9th, the President, Dr. Sansom, being in the chair. About 140 Fellows and their guests sat down, and among the latter were the Servian Minister, the Hon. Sydney Holland, Mr. McConnell, Q.C., Dr. Clifford Allbutt, Mr. Victor Horsley and others. The usual loyal toasts having been honoured, the toast of "The Medical Society of London" was proposed by Dr. Goodhart, and responded to by the President. The toast of "The Sister Societies," proposed by Dr. John Anderson, was acknowledged in an eloquent and humorous speech by Dr. Swanzy, the president of the Ophthalmological Society of the United Kingdom. Mr. Alfred Cooper proposed "The Visitors," on whose behalf the Hon. Sydney Holland and Dr. Griffith, the Master of the Society of Apothecaries responded. Mr. W. R. McConnell proposed "The Health of the President," which was received enthusiastically. "The Health of the Officers and Council" was proposed by Mr. F. C. Wallis, Dr. Frederick Roberts and Dr. Robert Maguire, the senior honorary secretary, replying. An excellent musical programme had been arranged by Dr. Maguire, which contributed greatly to the enjoyment of the evening.

ABSCESS OF THE BRAIN.

AT a recent meeting of the New York Neurological Society Dr. Peterson showed a specimen which is of considerable interest as illustrating a risk in connexion with cerebral abscess which is apt to be overlooked. The risk is that although the abscess may give rise to the most obtrusive symptoms other collections of pus may be present and may be unsuspected. The patient was a man, forty-one years of age, who had struck his head on a rusty spike and fractured his skull. The skull was trephined but the dura mater was left untouched. For two weeks after this the patient remained fairly well. He then gradually developed left

[1] Neurologisches Centralblatt, Feb. 15th, 1898.

hemiplegia with hemianæsthesia. There was neither aphasia nor involvement of the face or tongue. But there was left hemianopia and the fundus was "cloudy." Under the supposition that an abscess was present the skull was opened in the parietal region and an abscess was tapped and drained deep in the substance of the hemisphere. There was rapid and considerable improvement in the paralysis, but a few days later the patient became suddenly worse and died. There was no meningitis, but deep in the right hemisphere an abscess as large as a hen's egg was found. It is not definitely stated that this was a separate abscess from that which was tapped and drained or whether it was the result of a re-accumulation in the old cavity. Presumably it was the former, and the case shows that just as abscess in the brain in connexion with ear disease may be multiple so suppuration arising from another cause may occur in more than one place, so that evacuation of one abscess may not always be sufficient to save the patient's life.

A CONGRESS of Gynæcology, Obstetrics, and Pædiatrics will be held at Marseilles from Oct. 8th to 15th, Professor Pinard, Professor Pozzi, and Professor Broca respectively presiding over the three sections in the order named. A member's subscription is 20 francs (16s.). Intending readers of papers are requested to communicate before Aug. 1st with the general secretary, Professor Queirel, 20, Rue Grignan, Marseilles.

AT a meeting of the Council of University College held on March 5th Mr. J. S. Risien Russell, M.D. Edin., F.R.C.P. Lond., was appointed assistant physician to University College Hospital. Dr. Charlton Bastian was appointed consulting physician to the hospital and the title of Emeritus Professor of Medicine and Clinical Medicine was conferred on him.

THE Secretary for Scotland, Lord Balfour of Burleigh, has approved the appointment of Professor John Glaister, M.D. Glasg., of St. Mungo's College, Glasgow, to the vacant chair of Forensic Medicine in the University of Glasgow.

THE members of the United Faculties' Club of the University of London dined together at the Hôtel Métropole on Wednesday last. Sir Joshua G. Fitch presided and about forty members and guests were present.

H.R.H. THE DUKE OF CONNAUGHT, President of the City of London Hospital for Diseases of the Chest, Victoria-park, E., will preside at the festival dinner of the institution on May 12th, at the Hotel Cecil.

THE late Mr. Henry William Freeman, F.R.C.S. Irel., of Bath, has bequeathed by his will £1000 to the Middlesex Hospital "for the development of obstetric scholarship."

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.—An examination for the certificate of this Association in nursing and attendance on the insane will be held on Monday, May 2nd, 1898. Candidates should obtain from Dr. Spence, Burntwood Asylum, Lichfield, a schedule to be filled up, signed, and returned to him four weeks prior to the date of the examination.

STROUD DISTRICT NURSING ASSOCIATION.—At the annual meeting of this association it was stated that 2240 visits had been made during 1897, about half of which had been quite free to the poor, whilst for more than 500 others only a nominal sum had been charged. The balance sheet showed that £138 had been raised, and there was a balance in hand of £2. The cost of furnishing the new home amounted to £153.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE fourteenth meeting of the Royal Commissioners was held at the Westminster Town Hall on March 7th.

All the Commissioners were present with the exception of the Right Hon. John William Mellor, M.P. Sir George Barclay Bruce left soon after the resumption of the sitting.

The whole of the sitting was occupied by the examination of Mr. W. H. Dickinson, chairman of the Water Committee of the late London County Council. In the course of the examination the witness said that he was not sure that the newly-elected Council would take exactly the same views which he had expressed as being those of the late Council with regard to the various matters concerning arbitration. With regard to the memorandum which he had drawn up for the guidance of the Council in the year 1891 he said that the calculations he had then made were "not very serious." These calculations, it may be remembered, had reference to the purchase of the water undertakings, which were then roughly valued at £30,000,000.

Mr. DICKINSON was examined at some length with regard to the views of the late Council on the purchase of the undertakings of the water companies. He said that there was a difference of opinion between the parties into which the Council was divided as to the advisability of their purchase by the Council. The Moderate party objected to the purchase because if the undertakings were bought and the Council were placed, as it were, "in the saddle" they would not readily part with the property which they had obtained and that the temporary possession of it might prejudice the decision as to the ultimate management of the London water-supply. A Parliamentary Committee of the London County Council was instructed to prepare a Bill for the purchase of the undertakings and an arbitration clause was introduced to the following effect:—

> The consideration to be paid by the Council for the transfer of the undertaking (if determined by arbitration) shall be such sum of money as the arbitrators determine to be the fair and reasonable value of the undertaking having regard to all the circumstances of the case. In ascertaining this sum the arbitrators may receive all evidence and consider all contentions that may be urged on behalf of the Council and of the companies respectively as affecting the value of the undertakings and shall have full power to deal with the same or any of them in such manner as they in their absolute unfettered discretion may think fit. But no allowance shall be made for compulsory sale except so far as the arbitrators may award to meet the cost of re-investment.

Bills were drafted for the purchase of the businesses of the eight water companies by the Council. The Bills were presented for the second reading in the House of Commons in March, 1897, but were opposed by the Government and rejected. During the last session of Parliament Bills were promoted by the New River, East London, and Southwark and Vauxhall Companies and these were passed. After the appointment of the present Royal Commission the Water Committee prepared a series of resolutions which they believed would represent the opinion of the large majority of the Council. These resolutions were given by Mr. Cripps, the Parliamentary agent of the London County Council, at an earlier sitting of the Commission. Mr. Dickinson contended that the arbitrators should not be precluded by legal objection from examining all the circumstances of the case with regard to the undertakings of all the companies. He did not wish it to be understood that he thought that the arbitrator should have power to override Acts of Parliament, but he insisted that the arbitrator should consider the equity of the case in every individual instance.

In answer to Mr. CRIPPS Mr. Dickinson said that the arbitrator should have the largest possible power and that he should be unfettered and should have the greatest possible discretion allowed him. If the undertakings were not purchased Mr. Dickinson thought the companies should be placed under more strict obligations. He contended that Parliament in the year 1852 had not foreseen that the profits made by the water companies would be so great as they have been since that date, and he was of opinion that had the enormous increase in the rateable value of property been foreseen the statutory privileges given to the companies would have been withheld. The witness thought that if the present companies were to go on with the water-supply it would be necessary before any

measures of control were carried out that the position of the companies should be reviewed with regard to their capital, to the charges they are allowed to make, and to the dividends they pay to their shareholders.

The CHAIRMAN asked the witness whether if purchase were carried out without this revision it would not be disadvantageous to the ratepayers. The statutes "unhappily" allowed the charges which were made by the companies for the water which they supplied. He asked the witness a number of questions with a view to elicit from him the manner in which he had in the year 1891 arrived at the conclusion that if the companies were bought out at the price of £30,000,000 the result to the water consumers would probably be an increase in the water-rents to the extent of about 30 per cent. Mr. Dickinson said that his calculations were not very serious, and that he did not possess a copy of them or a record of the method by which his results had been obtained.

Mr. CRIPPS suggested that Mr. Dickinson did not wish to be pinned to the memorandum, and the CHAIRMAN said that although he understood that the witness now repudiated his memorandum of 1891 he wished to be in a position to judge whether the conclusions at which he had then arrived were justified.

In answer to the CHAIRMAN, Mr. Dickinson said that if the undertakings of the water companies were bought an outlay of fifteen or sixteen millions above the purchase price would soon be necessary in order to commence the Welsh scheme.

In answer to Major-General SCOTT the witness said it would be necessary in order that the new supply should be ready by 1931 that they should begin to construct the works ten or twelve years before that date.

In answer to Mr. LE BOCK PORTER, Mr. Dickinson said that no resolution had been passed by the London County Council on the question of the control of the companies and that the Council had never had before them any definite scheme of control. They had, however, come to the conclusion that control would effect no permanent solution of the difficulty and that there would be no finality unless the undertakings of the water companies were purchased.

Major-General SCOTT pointed out that if there had been defects in the water service it appeared to him that they would have manifested themselves in detail and that cases would have arisen for the London County Council to bring into force the powers which they already possessed, and he asked how it was that the Council had not found occasion to use those powers. In reply Mr. Dickinson said that the companies had performed their duties better since the London County Council came into existence and that there were difficulties in the way of prosecution. The Chairman suggested that the difficulty appeared to be that the Council were unable to prove their cases. Mr. Dickinson thought that information with regard to the working of the companies' undertakings should be given to the Council. They had asked to be allowed to inspect the system of filtration adopted by the companies and had been refused. Witness thought also that they should know at what pressure the water was supplied and he said they had no means of knowing.

Major-General SCOTT asked some questions which showed the possible difficulties which would arise with regard to the distribution of the water between the Council and the extra-metropolitan authorities and

Mr. CRIPPS examined the witness at some length with regard to control. The witness said the Council had the powers which were formerly possessed by the Metropolitan Board of Works and that they had also the power of opposing Bills in Parliament and he admitted that the Council had spent a large sum, £38,000, in Parliamentary expenses, and that there had been much friction between the Council and the water companies. Mr. Cripps suggested that they had led a "cat and dog" life during the whole period of the existence of the London County Council and he asked Mr. Dickinson whether it would not be well if possible to put an end to that state of things. Mr. Cripps pointed out that under the Act of 1871 a water examiner and a public auditor were appointed. Mr. Dickinson said that with regard to the auditor's report he thought it would be well if the Council had power to be represented before the auditor. He thought also that the Council should have information with regard to the amount of water which was supplied for trade purposes and for private supplies. They had applied to the Local Government Board for information on this point and the Board had replied that it would involve too much trouble.

Mr. CRIPPS asked the witness if he did not think that the Act of 1852 was really an Act directed against competition between different companies and Mr. Dickinson pointed out that the Acts under which some companies were started were passed with the distinct idea that competition would ensue, and with reference to the consolidation of the gas companies into a monopoly he explained that there was this essential difference, that in the case of the water-supply no monopoly was possessed by any company. By special provisions in the Acts affecting water companies in country districts competition was prevented. The case of London was essentially different because no monopoly was given to any company. He thought that the management and control of the water-supply should be entirely in the hands of persons popularly elected.

Mr. CRIPPS asked the witness whether it was not advisable in the management of such an undertaking that some of these persons should have special knowledge of the subject, and asked whether there was any person elected to the Council who had such knowledge. Mr. Dickinson said that he himself had no such knowledge with regard to water-supply and that there was no guarantee that popularly elected candidates would have such knowledge. He thought, nevertheless, that it was best for the elected representatives to have the entire management of all matters relating to the water supply.

The CHAIRMAN referred to a paper which was sent in by the London County Council in reply to a communication from the Commissioners. In this communication reference was made to questions affecting the control of the companies. Mr. Dickinson said the paper did not contain any scheme of control.—The CHAIRMAN thought otherwise. (The matter in dispute was not read at the meeting but will appear in the minutes of evidence.) Mr. Dickinson said that the general policy of the London County Council had been carefully summed up and that he thought the Council would wish that the conclusions at which they had arrived should appear in the Commissioners' report *in extenso*. It is as follows:—

1. The Council has accepted as being recognised by a long series of Parliamentary decisions as well as by the general opinions and actions of other public authorities the principle that it is expedient that water-supply should not be the subject of trade, but should be administered by authorities representing the public.

2. By its investigations into the question of the future supply of the metropolis the Council has arrived at the conclusion that there exists an urgent necessity for measures to be taken for providing a very large additional supply, and that such additional supply should be obtained from more ample and more suitable sources than the rivers Thames and Lee. The responsibility of deciding whence the future water-supply should be drawn ought to rest on the representatives of the consumers, and not on private companies.

3. Being of opinion that there are special circumstances obtaining in the case of the water-supply of London, such as, *inter alia*, the conditions under which the Metropolitan water companies obtained their powers; the fact that they were granted no monopoly and that competition was intended by Parliament to operate as a protection to the consumer; and the fact that most of them have nearly reached the limit of their powers to fulfil their obligations to the consumers, and a large expenditure for additional supply is unavoidable, the Council has maintained that the price to be paid for the undertakings of the water companies should be a sum awarded by an arbitrator having regard to all circumstances affecting each undertaking.

4. In elaborating its policy the Council has followed the recommendations of the Committee presided over by Sir M. White Ridley It has, in the words of recommendation (ii.) promoted "Bills in Parliament for the purpose of constituting itself the responsible water authority for London acting through a statutory committee appointed ..... partly in conjunction with the Corporation of the City of London." It has in accordance with (iii.) proposed to "purchase, either alone or in conjunction with such of the authorities of the outside areas as may be arranged, the undertakings of the eight water companies ..... by agreement, or failing agreement by arbitration within a fixed period." It has further complied with recommendation (v.) and has offered to the authorities of the outside area to allow these bodies to purchase "(*a*) so much of the works of distribution as is appropriated to the district of such local authority and of the right to a supply in bulk from the Council, or (*b*) some of the sources of supply which with their works of distribution it may be found practicable and advantageous to sever from the general scheme."

5. The Council's policy has throughout been in favour of a public acquisition of the water companies' undertakings. So far as appears from its resolutions of Dec. 10th, 1895, Jan. 28th, 1896, July 14th, 1896, and July 13th, 20th, and 27th, 1897, it may be said that its policy in this respect remains unaltered. But there exists amongst members of the Council a difference of opinion with reference to the question of ultimate management, a large number of councillors supporting the proposition to establish a Water Board for the entire area interested in the water-supply. The majority, however, attach great importance to the principle of the supply within London being administered by the representative authority of the county and are willing to meet the difficulties arising in reference to the treatment of the outside areas by

handing over to the authorities in those areas the supply of their districts wherever this course is practicable.

6. With reference to the question of further control no definite scheme has at any time been formulated by any section of the Council, and the policy of the Council has proceeded on the assumption that no system involving the continuance of private companies will afford a permanent settlement of the question. If, however, Parliament refuse to authorise the public acquisition of the metropolitan water-supply the Council is of opinion that it is necessary that there should be an entire revision of the position of the Metropolitan Water Companies.

The next meeting of the Commissioners will take place at the Town Hall, Westminster, on Monday, March 14th.

THE ARMY MEDICAL DEPARTMENT REPORT FOR 1896.

SECOND NOTICE.[1]

THE Army Medical Report is published and issued with and without an appendix, the latter containing contributions dealing with matters of professional and clinical interest and army hygiene and the complete report is now before us. From our first notice it will be seen that the health of the troops serving at home and abroad in 1896 was on the whole very satisfactory; the ratios of sickness and mortality were lower than in 1895 and considerably below the average ratios of the preceding ten years. The progressive improvement taking place generally in the health of the army is a gratifying evidence of the beneficial influence which increased and improved barrack accommodation and the more favourable sanitary environment are gradually bringing about and the results speak well also for the care bestowed by the medical staff in these respects and in the treatment of the soldier when sick and disabled. We may parenthetically remark that the proposed large addition to the strength of the army will require, we presume, a corresponding addition to the barrack and hospital accommodation as well as an increased strength of the medical staff. Of course these results must be unfavourably influenced from time to time by the prevalence of epidemic disease among our troops, especially amongst those serving abroad. What is called a healthy and unhealthy year in India or elsewhere must necessarily give rise to fluctuations, and military expeditions of different kinds will also affect the results, for the increased sickness attributable to campaigns does not terminate with these but often remains to be harvested after the troops have returned to their quarters from active service in the field. Still, the relative freedom of late years from epidemic cholera among the European troops serving in India, to take one point, is satisfactory. Apart from malarial disease in India it is to the prevalence of enteric fever and venereal disorders that the sickness, invaliding, and mortality among our soldiers serving in that country are to be mainly attributed. Unhappily, too, venereal disease is not by any means limited to India, for it is very prevalent elsewhere, as in China and the Straits Settlements and the West Indies. The admissions from enteric fever among the troops serving in the United Kingdom in 1896 numbered 94 with 22 deaths, as against 137 with 35 deaths in the preceding year. The disease was somewhat more prevalent in Ireland than in England and Wales, while in Scotland there were only two admissions. The Channel Islands were entirely free from the disease and in the north-eastern, south-eastern, home, and Woolwich districts only single cases occurred. We may add that the present departmental volume contains a very interesting account of an outbreak of enteric fever at Pembroke Dock which, in the precision with which the causes of the outbreak were traced and established, partakes of the nature of a practical experiment and object-lesson in regard to the causation of this fever.

The districts showing the highest ratios of admission for venereal diseases among the troops serving in the United Kingdom were the Western, Dublin, and North-Eastern, with 239·6, 203·6, and 186·7 per 1000 respectively. *En passant* we may call attention to a rare and therefore interesting case (at page 15) of a young soldier who was fatally poisoned by a concentrated solution of quinine of which he had partaken. As regards recruiting, which possesses some interest at the present moment, we may say that in 1896 the number of recruits inspected during the year was 54,574. Of these, 23,111 were rejected as unfit, equal to a ratio per 1000 of 423·48. The remaining 31,463, or 576·52 per 1000, were found fit for the service. Of every 1000 recruits inspected 782 were natives of England and Wales, 87 were natives of Scotland, 119 were natives of Ireland—once the happy hunting ground of the recruiting sergeant—and 12 were born in the colonies or foreign countries. This proportion is practically the same as in the previous year.

The greatest number of recruits passed fit for service are between eighteen and nineteen years of age, the number at that age constituting nearly one-half of the total. The largest number of rejections on inspection is caused by defective development and the results in 1896 show an increase of 12·68 in the corresponding ratio for the previous year. The highest ratio of rejection was on account of deficient chest measurement. Defective vision was also a very frequent cause of rejection, the ratio being 40·72 per 1000, which was slightly higher than in 1895. There is not very much to detain us in the section comprising the sanitary reports of the various districts and stations of the United Kingdom. We much regret to notice that there are no increased facilities—at any rate, none on any adequate scale—for giving the soldier a warm bath. Every soldier should have the opportunity of obtaining a warm bath at least once a week and warm water should be laid on to the barrack bathrooms. It is highly desirable on hygienic grounds and on the score of personal cleanliness that this should be done, and it could be easily effected, as the baths are generally close to the cookhouses. The Royal barracks at Dublin, we are glad to notice, have been healthy and comparatively quite free from enteric fever since the drainage and the buildings themselves were reconstructed some years ago. Venereal diseases and enteric fever are still apparently unduly prevalent in Dublin and cases of the latter disease, although less numerous than formerly, are nevertheless noted in connexion with several of the barracks at that station. There was also an outbreak of scarlet fever at the Richmond barracks. It is of course very difficult, if not impossible, to ascertain how much of the sickness has been contracted by the soldiers outside, instead of inside, their barracks. We defer the consideration of that portion of the report dealing with the foreign stations, together with that of the useful and interesting appendix to the report, for our concluding notice.

[1] The first notice appeared in THE LANCET of Feb. 26th, 1898.

WATER-BORNE TYPOHID FEVER.

DR. CHRISTOPHER CHILDS opened a discussion on the above subject at a sessional meeting of the Sanitary Institute on March 9th, Mr. Shirley Murphy in the chair. For convenience he considered the matter under three aspects—namely, (1) proofs that typhoid fever is frequently water-borne; (2) ways in which the infectious material is conveyed from the patient into water used for drinking; and (3) means by which this pollution may be prevented. Briefly dealing with the first two divisions he passed on to discuss the means by which pollution might be prevented, remarking that if we made full and proper use of the acquired knowledge at our disposal with regard to the causes of typhoid fever we should reduce the mortality of that disease to a minimum—from several thousands of deaths per annum in the United Kingdom to, at most, a few hundred, or even less. That was to say, if we could ensure general notification of the disease, isolation of cases where necessary, complete disinfection of the patient and his excreta, protection from sewer air and fæcal emanations, prevention of pollution of soil and of water with organic refuse and typhoid excreta, we should every year in England and Wales alone save some 4000 lives, prevent the prolonged sickness and suffering—otherwise to be expected—of some 40,000 to 50,000 individuals, and lighten the rates by some hundreds of thousands of pounds. Of all the measures available for the prevention of typhoid fever thorough disinfection, correction of insanitary conditions in houses, drains, sewers, &c., protection of the soil, and protection of water from pollution were the most important, and

of these the last-named, the protection of our water-supplies, was the one measure calling for immediate action. Up to the present time little or no effective attempt had been made to secure a thorough and systematic prevention of pollution of our water-supplies throughout the whole kingdom. The clauses relating to water-supply in the Public Health Act of 1875, the Rivers Pollution Prevention Act of 1876, and the Public Health (Water) Act of 1878 were practically quite inadequate for securing a general protection of our waters from pollution. We relied chiefly upon our waterworks companies and our sanitary authorities for securing us against the introduction of poisonous material into the water with which the companies supply us and which we have to drink if we drink any water at all. But under the existing state of the law the obligations laid on the companies and the powers granted to the authorities for thorough and constant supervision were so insufficient that we had little or no ground for such confidence. For long we had adopted the pernicious habit of trusting almost entirely to chemical analysis—more recently also to bacteriological analysis—for detecting pollution, generally without investigating the surroundings of the source, of the tributaries, and of the course of the water-supply, and nearly always without securing constant inspection and supervision. Even if the analyses were made daily they would not enable us to prevent pollution. They could only detect the pollution after it had taken place.

Thorough, systematic, and regular inspection of our water-supplies from their source to their distribution was the first requirement for the prevention of pollution, such inspection being supplemented by analyses (chemical and bacteriological) made and reported upon by experts at frequent intervals. The sanitary authorities should have free access to all parts of the water-supply of their district. Authorities representative of the chief interests concerned should be appointed for each watershed area of the kingdom, who should have the care and supervision of the waters within each respective watershed, who should take prompt measures to prevent any threatened pollution and to abolish any detected pollution of any water, and who should be responsible for the administration of the laws respecting the protection of water within their district.

A study of the existing laws respecting water-supplies and the pollution of water (as set forth in the Acts of 1875, 1876, and 1878) would show that they fall very far short of the requirements mentioned above. Probably the public were quite unconscious of the very inadequate protection which is afforded to us by these statutes against the dangers arising from the pollution of water. Considering that sanitary authorities were too often the greatest polluters and that they were constantly subjected to the influences of local and vested interests and to the incessant cry for the reduction of rates, it was not to be wondered at that the administration of these Acts had not been attended with success. The authority to whom the supervision and protection of our water-supplies should be entrusted should be representative of the most important interests within the district under its control and should be strong enough to be independent of local interests and local influences which might operate against the right performance of its duties. If we looked for a precedent of such an authority, we should find an excellent model in the Lee Conservancy Board, which had worked continuously and systematically during thirty years for the purification of the River Lee and had worked with pre-eminent success.

We could not hope for thorough and effective legislation against water pollution until the people could be roused from their indifference—until they could be made conscious of the disgusting contamination to which our water-supplies were so commonly liable and could be convinced of the danger to which they were themselves constantly exposed, and until they insisted upon the carrying out of those reforms which would afford them reasonable protection. There could be no doubt that the chief cause of this indifference was ignorance—ignorance of different kinds and degrees but common throughout all classes. Such ignorance could be dispelled only by persistent and systematic education, and it was for this reason that he ventured to suggest (by proposing a resolution to this effect) that that Institute, one of whose primary objects is "to diffuse knowledge relating to sanitary science" should (through its council) consider a scheme "for diffusing knowledge relating to the causes of typhoid fever and the ways of preventing it." The demands which he had advocated on behalf of the protection of our water-supplies might seem too large, too exorbitant, too adverse to vested interests, and too exacting from our water companies. But if these companies were doing their duty there would be little or no extra burden laid upon them. If they agreed with him he trusted they would give their assent to the following proposals:—

That the Council of the Institute be requested to consider the possibility of organising and carrying out a scheme for diffusing knowledge with regard to the causes of typhoid fever and the means of preventing it throughout the whole kingdom. That the Council of the Institute be requested to consider the best means for obtaining new and effective legislation for the protection of our water-supplies from pollution, whereby it shall be enacted that—

1. All local sanitary authorities shall have free access to the water-supplies—from source to distribution—which are distributed within their districts, whether the source and course of the water so supplied be within their district or not. That the sanitary authorities provide for the thorough and regular inspection of the water-supplies distributed within their districts and for the regular analysis of such water as often as may be deemed sufficient, and that the results of such inspections and analyses shall be regularly recorded and published.

2. That the waterworks companies shall prepare and publish records of their water-supplies; such records containing a full account of every source and tributary of the water-supply and a full account of all reservoirs, conduits, filter-beds, mains, and pipes by which the water which they supply is collected, stored, or conveyed to the houses supplied; such records also being fully illustrated by maps, plans, and sections, showing the relation of all houses, drains, sewers, cesspits, and all deposits of organic refuse in the immediate neighbourhood of any part of the water supplied by them, and that all such records, maps, plans, sections, &c., shall be freely accessible for the purposes of inspection to the sanitary authority within whose district the water is supplied and to every customer of the waterworks company.

3. That the waterworks companies shall be required to make regular, constant, and thorough inspection of all parts of the water supplied by them—from source to distribution—with a view to preventing wilful, careless, or accidental pollution; also to make regular analyses of the water supplied by them so often as may be considered necessary and to make and publish reports of all such inspections and analyses.

4. That waterworks companies shall be made responsible for the consequences of the pollution of water supplied by them if such pollution could reasonably have been prevented.

5. That wilful or careless pollution of any water-supply shall be regarded and treated as a penal offence.

6. That authorities representative of the interests concerned be appointed for each watershed of the Kingdom, who shall have the general care and supervision of the waters within each respective watershed, shall take prompt measures to prevent any threatened pollution and to arrest any detected pollution of any water, and shall be responsible for the due and effective administration of the laws respecting the protection of water within their districts.

The SECRETARY then read a letter from Dr. Sims Woodhead, in which he expressed his concurrence with the views held by Dr. Childs under the first two headings of his subject but ventured to express the belief that the conditions under which the foci from which the disease may spread are formed were too frequently overlooked. He also agreed with the opinion that although bacteriological and chemical analysis was valuable the careful examination and supervision of the supply areas would ultimately lead to the improvement of the supplies.

Major FLOWER was of opinion that individual action was the best means of getting rid of the pollution of rivers. He entirly agreed with Dr. Childs.

Dr. J. LANE NOTTER said that if they traced back the history of the matter for the last thirty years they would find that it was only since the people had come to use water freely that the actual necessity for dealing with the matter had become accentuated. He quite agreed that the watershed area should be under the control of a single individual. With regard to bacteriological and chemical examination more good would be got, he thought, from observation of the supply and its surroundings.

Dr. RIDEAL believed that conflicting interests were the stumbling-block to reform. He suggested that the difficulty might be surmounted if means were provided for filtering the water on the consumers' premises.

Dr. NEWSHOLME pointed out that the greater number of people in this country did not receive their water-supply from rivers but from wells. The first object of a water company was to secure a dividend. He did not agree that any new body should be created to deal with the matter, but that greater powers should be given to those local bodies who had already shown themselves anxious to deal with the subject.

Mr. WANKLYN expressed the belief that contaminated private wells were more responsible for the spread of typhoid fever than the water supplied by water companies.

Dr. LOUIS PARKES urged that a strong deputation should be formed to wait upon the Government. His own idea was that county councils should be invested with further powers, if necessary, to give them the sanitary control of the watershed areas of the country. Referring to a point mentioned in Dr. Woodhead's letter he said that although the typhoid bacilli might not be able to live for any length of time in

open rivers when they got to private cisterns they met with conditions that enabled them to thrive—i.e., absence of light with the presence of organic matter.

Dr. REGINALD DUDFIELD was inclined to attribute the contamination of water to the defective state of drains and sewers.

Mr. DEFRIES did not agree with Dr. Rideal that it would be practicable to leave the filtering of the water to individual consumers.

Mr. SHIRLEY MURPHY said that the difficulty underlying the whole of this question was that human nature was not always to be relied upon and remedial measures had to be designed so that human nature might be less capable of inflicting injury. Water ought not to be supplied for profit whether by companies or by sanitary authorities. Water was a necessity for the community and the moment it was made a trading interest difficulties commenced. That was an important point and one to which the attention of the Legislature might be directed.

A vote of thanks having been heartily accorded to Dr. CHILDS for his paper the proposals which he had placed before the meeting were seconded by Dr. PARKES and it was unanimously agreed to submit them to the Council of the Sanitary Institute.

THE INDIAN FRONTIER CAMPAIGN AND ITS FIELD HOSPITAL SERVICE.

As medical journalists questions of policy do not concern us and we need therefore do no more than allude to Lord Roberts's vigorous vindication in the House of Lords of the so-called "forward policy." One thing, however, appears certain. From a political and financial point of view the question is likely to solve itself. It is practically impossible to prosecute this policy at the present time. The Indian exchequer could not bear the drain of a war of subjection to be followed by the cost of the maintenance of the requisite military force for holding the conquered country. The plague in India is probably at the present time the most serious matter that can engage the attention of the Indian Government. The number of deaths from plague in Bombay is increasing and the virulence of the disease shows no abatement, while there is a serious state of unrest and opposition among the natives—Hindus and Mahommedans—to the Government measures for its repression.

As regards the frontier war, the latest news from India is of a much more hopeful character. The Akka Khels are submitting and surrendering their rifles and it is expected that their action will be followed by the Kambar Khel section, in which case the war will be practically over. The plan and conduct of the late campaign in Tirah will no doubt give rise to a good deal of consideration and criticism, for while the courage, discipline, and conduct of the troops have been beyond praise some serious questions still remain to be answered. Sir William Lockhart's dispatches, so far as these have been published, have raised several points regarding the conduct of the operations and the appointments of the military staff which will have to be cleared up. Be this as it may, however, the medical department of the Army has, we have good reason to believe, done extremely well throughout the operations on the frontier; the sick and wounded have been well cared for, regard being had to the exceptionally trying conditions of the campaign, and the sanitation of camps and the health of the troops have been properly supervised. When all the facts have been collated and the medical and surgical history of the war has been compiled it will, we believe, be seen that the results attained have been eminently satisfactory. The frontier war has been the biggest one since the Kabul campaign of 1878–80. Thirty-six field hospitals and two field medical depots have been mobilised and some 3000 beds were provided in general hospitals. A few facts connected with Indian army medical organisation and administration may be of interest to our readers at the present time. There are some 68 British and native field hospitals ready packed and distributed between the several military districts in proportion to the strength of the garrison. These field hospitals are regularly exercised during peace manœuvres; and in order to prevent deterioration their stock and equipment are periodically transferred to station hospitals in exchange for fresh issues. The field hospitals are for 100 beds and are admirably designed for mountain warfare by being divisible into four separate and complete sections. Every regiment and battery, British and native, is supplied as part of its permanent equipment with sufficient medical material to enable it to move anywhere at once. Owing to the distribution of the equipment in districts a field hospital can be promptly mobilised, and on one occasion recently sixteen field hospitals were mobilised in twelve days. Separate wards, fully equipped even to carpets, are also set apart in station hospitals for officers. An officer in hospital pays a stoppage of 2 rupees per diem, which is inclusive of all charges, consequently the benefit of being accommodated and treated in hospital is brought within the means of the most junior sick subaltern. India has at the present time, too, a nursing service of fifty-two lady nurses (hardly sufficient for its needs), supplemented by an efficient staff of orderlies selected from intelligent soldiers who undergo a six months' course of training in addition to being instructed by the staff of lady nurses.

We hear that a medical officer of the French army, who has had great experience in Tonkin, lately visited the field and general hospitals in India and was greatly impressed with all he saw, and especially so with the field hospital organisation and the division of the hospitals into sections, which he considered unique. A medical officer of the Japanese army has also paid a visit to India with the object of inquiring into the hospital system and inspecting the field medical equipment and expressed his great satisfaction with the results of his personal investigation. We think, therefore, that people in this country who have relations and friends serving in India may feel confident that the Government of India, through its medical services, has striven to do its best for the sick and wounded soldiers.

A SECOND REPORT TO THE REGISTERED PRACTITIONERS OF ENGLAND AND WALES.

IT having been rendered necessary for me to bring to the notice of the profession in my first Report to the Registered Practitioners of England and Wales in January of the present year the very serious mistake committed by the President of the General Medical Council in his officially informing the Privy Council on July 1st, 1897, that unregistered foreign practitioners enjoy the right to practise medicine unrestrictedly in this country, I am glad to be able now to report that my letter of protest, though never answered, has been adopted by those who act in the name of the Council. The Executive Committee of the General Medical Council met on Feb. 21st, 1898, and took upon itself to respond in the name of the General Medical Council to a request of the Privy Council, dated Jan. 21st, 1898, that they should inform the latter, for the use of the German Government, of the facts relating to the practice of medicine in this country by foreigners, and further that they should afford the Privy Council in a second letter comments on a letter addressed to them by Mr. Bousfield who had drawn the attention of the Privy Council to the facts which I had published in my first report.

I need not repeat here in full detail the statements of the Executive Committee, but reference to the recently published minutes shows that in their reply to the Privy Council the Executive Committee have adopted my statements respecting the restrictions which the Medical Acts impose on foreigners as well as on other unregistered persons practising in this country and have thus abandoned the erroneous position assumed by the President on July 1st, 1897.

Though the Executive Committee have thus furnished the Privy Council with more accurate information, they have not withdrawn the erroneous letter of July 1st, 1897. The result, therefore, is that the Privy Council now has before it two official letters from the General Medical Council which are in absolute contradiction to each other.

There are further statements in the above-mentioned second letter of the Executive Committee to the Privy Council which are not only incorrect, but constructively

misleading. These, however, I must deal with at the session of the Council in May next.

VICTOR HORSLEY, F.R.S., F.R.C.S.Eng.,
Direct Representative on the General Medical Council.
Cavendish-square, March 7th, 1898.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6573 births and 4454 deaths were registered during the week ending March 5th. The annual rate of mortality in these towns, which had been 20·4 and 20·9 per 1000 in the two preceding weeks, declined again last week to 20·7. In London the rate was 20·9 per 1000, while it averaged 20·6 in the thirty-two provincial towns. The lowest rates in these towns were 13·0 in Preston, 15·3 in West Ham, 15·7 in Blackburn, and 16·5 in Bradford; the highest rates were 23·9 in Sunderland, 24·0 in Birmingham, 25·0 in Bristol, and 26·1 in Gateshead. The 4454 deaths included 481 which were referred to the principal zymotic diseases, against 464 and 504 in the two preceding weeks; of these, 232 resulted from measles, 96 from whooping-cough, 66 from diphtheria, 37 from diarrhœa, 25 from "fever" (principally enteric), and 25 from scarlet fever. No death from any of these diseases was recorded last week in Portsmouth or in Burnley; in the other towns they caused the lowest death-rates in Plymouth, Bolton, and Halifax, and the highest rates in Gateshead, Bristol, Swansea and Leicester. The greatest mortality from measles occurred in Derby, Huddersfield, Gateshead, Blackburn, Bristol, Swansea and Leicester. from whooping-cough in Nottingham; and from "fever" in Gateshead. The mortality from scarlet fever showed no marked excess in any of the large towns. The 66 deaths from diphtheria included 38 in London, 4 in Liverpool, 4 in Leeds, 3 in West Ham, 3 in Cardiff, and 3 in Birkenhead. No fatal case of small-pox was registered last week either in London or in any other of the thirty-three large towns. There was one case of small-pox under treatment in the Metropolitan Asylum Hospitals on Saturday last, March 5th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on the same date was 2534, against 2871, 2781, and 2674 on the three preceding Saturdays; 175 new cases were admitted during the week, against 232, 233, and 199 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 438 and 416 in the two preceding weeks, rose again last week to 425, but were 139 below the corrected average. The causes of 73, or 1·6 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Oldham, Bradford, Newcastle-upon-Tyne, and in ten other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Salford, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had increased in the five preceding weeks from 17·4 to 20·5 per 1000, further rose to 21·8 during the week ending March 5th, and exceeded by 1·1 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 12·3 in Leith and 19·3 in Paisley to 24·3 in Glasgow and 25·5 in Perth. The 659 deaths in these towns included 27 which were referred to whooping-cough, 20 to measles, 18 to diarrhœa, 8 to scarlet fever, 3 to "fever," and 2 to diphtheria. In all, 78 deaths resulted from these principal zymotic diseases, against 90 and 72 in the two preceding weeks. These 78 deaths were equal to an annual rate of 2·6 per 1000, which was 0·4 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 25 and 20 in the two preceding weeks, rose again to 27 last week, of which 19 occurred in Glasgow, 3 in Edinburgh, and 3 in Paisley. The 20 deaths referred to measles showed a further increase upon the numbers recorded in recent weeks, and included 18 in Glasgow. The fatal cases of scarlet fever, which had been 12 and 10 in the two preceding weeks, further declined to 8 last week, of which 4 occurred in Glasgow and 2 in Edinburgh. The 3 deaths referred to "fever" also showed a further decline from recent weekly numbers and were all registered in Glasgow. The deaths from diseases of the respiratory organs in these towns, which had been 91 and 117 in the two preceding weeks, further rose to 142 last week, but were considerably below the number in the corresponding period of last year. The causes of 44, or nearly 7 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 28·5 and 31·2 per 1000 in the two preceding weeks, further rose to 32·5 during the week ending March 5th. During the past nine weeks of the current quarter the death-rate in the city has averaged 31·6 per 1000, the rate during the same period being 22·0 in London and 18·9 in Edinburgh. The 218 deaths registered in Dublin during the week under notice showed an increase of 9 upon the number in the preceding week, and included 16 which were referred to the principal zymotic diseases, against 11 and 9 in the two preceding weeks; of these, 7 resulted from "fever," 5 from scarlet fever, 2 from whooping-cough, and 2 from diarrhœa, but not one from measles, diphtheria, or small-pox. These 16 deaths were equal to an annual rate of 2·4 per 1000, the zymotic death-rate during the same period being 2·7 in London and 1·1 in Edinburgh. The deaths referred to different forms of "fever," which had been 4 in each of the two preceding weeks, rose to 7 last week. The 5 fatal cases of scarlet fever considerably exceeded the number registered in any recent week. The mortality from whooping-cough and from diarrhœa also exceeded that recorded in the preceding week. The 218 deaths in Dublin last week included 36 of infants under one year of age, and 64 of persons aged upwards of sixty years; the deaths of infants showed an increase, while those of elderly persons were below those recorded in the preceding week. Ten inquest cases and 7 deaths from violence were registered; and 84, or more than a third, of the deaths occurred in public institutions. The causes of 11, or 5 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING FEBRUARY, 1898.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality during February in each of the forty-three sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis last month, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 7·8 per 1000 of the population, estimated at 4,504,766 persons in the middle of this year. In the three preceding months the rates had been 12·7, 9·8, and 8·2 per 1000 respectively. Among the various sanitary areas the rates were considerably below the average in St. George Hanover-square, St. James Westminster, Marylebone, Hampstead, St. Martin-in-the-Fields, and Bermondsey; while they showed the largest excess in Fulham, Hackney, St. Olave Southwark, Battersea, Wandsworth, and Woolwich. Three cases of small-pox were notified in London during February, corresponding with the number in the preceding month; of these, 2 belonged to Poplar and 1 to Lee sanitary areas. No small-pox case has been under treatment in any of the Metropolitan Asylum Hospitals since August last. The prevalence of scarlet fever in London showed a further decline from that recorded in the four preceding months; this disease was proportionally most prevalent in Fulham, Hackney, St. Luke, Poplar, Newington, Battersea, and Woolwich sanitary areas. The Metropolitan Asylum Hospitals contained 2640 scarlet fever patients at the end of February, against 3731, 3507, and 3021 at the end of the three preceding months; the weekly admissions averaged 214, against 367, 272, and 232 in the three preceding months. The prevalence of diphtheria in London during February slightly exceeded that recorded in the preceding month; among the various sanitary areas this disease showed the highest proportional prevalence in Fulham, Hackney, Holborn, St. Saviour Southwark, Battersea, and Wandsworth. There were 1057 diphtheria patients under treatment in the Metropolitan

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING FEBRUARY, 1898.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1898.	NOTIFIED CASES OF INFECTIOUS DISEASES.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of Infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,504,766	3	1206	969	—	129	4	22	360	—	2693	7·8	—	373	51	165	235	—	31	1	45	901	2·6	7399	21·4	143
West Districts.																										
Paddington	127,480	—	23	12	—	6	—	—	9	—	50	5·1	—	6	2	3	6	—	1	—	—	18	1·8	194	19·8	147
Kensington	172,174	—	40	21	—	4	—	1	12	—	78	5·9	—	10	2	3	1	—	—	—	1	17	1·3	256	19·3	165
Hammersmith	107,370	—	21	15	—	2	1	1	6	—	46	5·6	—	26	1	1	3	—	—	—	2	33	4·0	214	26·0	178
Fulham	125,275	—	65	43	—	2	1	—	7	—	118	12·3	—	15	2	7	8	—	—	—	—	20	3·1	178	18·5	139
Chelsea	86,713	—	24	18	—	3	—	—	8	—	53	7·1	—	12	2	2	5	—	—	—	—	21	2·8	153	20·6	114
St. George Hanover-square	80,608	—	11	7	—	1	—	—	4	—	23	3·7	—	3	—	2	3	—	—	—	1	8	1·3	95	15·4	100
Westminster	52,574	—	10	17	—	—	—	—	4	—	31	7·7	—	10	1	4	4	—	—	—	1	20	5·0	111	27·5	276
St. James Westminster	22,200	—	1	6	—	—	—	—	—	—	7	4·1	—	2	—	1	—	—	—	—	—	3	1·8	51	29·9	226
North Districts.																										
Marylebone	140,483	—	11	19	—	3	—	2	4	—	39	3·6	—	4	1	5	7	—	1	—	4	22	2·0	228	21·2	122
Hampstead	78,785	—	15	9	—	—	—	1	—	—	25	4·1	—	6	—	3	3	—	—	—	—	12	2·0	82	13·6	81
St. Pancras	243,416	—	49	40	—	6	—	2	17	—	114	6·1	—	13	5	7	5	—	4	—	3	37	2·0	440	23·6	132
Islington	244,616	—	83	74	—	15	—	4	22	—	198	7·5	—	49	3	13	13	—	1	—	1	80	3·0	516	19·5	154
Stoke Newington	34,660	—	3	6	—	—	—	—	3	—	12	4·5	—	4	—	—	—	—	—	—	1	5	1·9	39	14·7	122
Hackney	219,630	—	79	102	—	3	—	—	21	—	205	12·2	—	13	4	23	16	—	—	—	—	56	3·3	351	20·8	146
Central Districts.																										
St. Giles	37,519	—	2	4	—	—	—	1	6	—	13	4·5	—	1	—	—	—	—	—	—	—	1	0·3	57	19·8	65
St. Martin-in-the-Fields	12,424	—	1	—	—	—	—	—	—	—	1	1·0	—	—	—	—	—	—	—	—	—	—	—	11	11·5	71
Strand	23,284	—	3	6	—	1	—	—	1	—	11	6·2	—	3	—	1	—	—	1	—	—	5	2·8	48	26·9	147
Holborn	30,016	—	7	15	—	1	—	—	2	—	25	10·8	—	1	—	2	1	—	1	—	3	8	3·5	69	29·9	145
Clerkenwell	66,130	—	19	21	—	2	—	—	6	—	48	5·5	—	2	1	3	5	—	1	—	1	13	2·6	117	23·1	134
St. Luke	41,076	—	14	14	—	—	—	—	—	—	28	5·9	—	1	2	—	3	—	—	—	2	8	2·5	84	26·7	186
City of London	29,068	—	5	2	—	1	—	—	3	—	11	4·9	—	1	—	—	1	—	1	—	—	3	1·3	47	21·1	98
East Districts.																										
Shoreditch	121,485	—	26	18	—	2	—	—	13	—	59	6·3	—	11	—	—	17	—	2	—	3	33	3·5	255	27·4	177
Bethnal Green	129,027	—	44	19	—	4	—	1	20	—	88	8·9	—	9	2	4	33	—	—	—	—	48	4·8	264	26·6	158
Whitechapel	80,559	—	25	18	—	7	—	—	4	—	54	8·7	—	4	—	2	2	—	1	—	—	9	1·5	138	22·3	131
St. George-in-the-East	48,241	—	15	9	—	3	—	—	3	—	30	8·1	—	1	—	1	4	—	—	—	—	6	1·6	95	25·7	173
Limehouse	58,661	—	17	13	—	—	—	—	12	—	42	9·3	—	8	—	2	5	—	—	—	—	15	3·3	129	28·7	221
Mile End Old Town	112,528	—	28	14	—	6	—	—	12	—	60	7·0	—	11	2	6	15	—	—	—	1	35	4·1	212	24·6	140
Poplar	170,220	2	72	41	—	7	1	—	18	—	141	10·8	—	25	1	12	23	—	2	1	1	65	5·0	336	25·7	153
South Districts.																										
St. Saviour Southwark	24,562	—	6	10	—	—	—	—	1	—	17	9·0	—	—	—	—	—	—	—	—	—	—	—	57	30·3	185
St. George Southwark	60,461	—	14	16	—	—	—	—	5	—	35	7·6	—	5	—	3	—	—	2	—	—	10	2·2	113	24·4	121
Newington	123,183	—	48	33	—	5	—	—	15	—	101	10·7	—	7	3	5	—	—	—	—	2	17	1·8	222	23·5	168
St. Olave Southwark	11,288	—	9	2	—	—	—	—	—	—	11	12·7	—	—	—	1	—	—	—	—	—	1	1·2	25	28·9	79
Bermondsey	85,738	—	17	5	—	2	—	—	3	—	27	4·1	—	9	2	2	6	—	1	—	1	21	3·2	154	23·4	157
Rotherhithe	40,849	—	8	6	—	2	—	—	6	—	22	7·0	—	3	—	4	—	—	—	—	—	7	2·2	61	19·5	104
Lambeth	304,073	—	73	49	—	6	1	1	17	—	147	6·3	—	18	—	4	11	—	2	—	2	37	1·6	452	19·4	124
Battersea	171,921	—	73	59	—	4	—	—	16	—	152	11·5	—	17	2	8	7	—	—	—	2	36	2·7	270	20·5	180
Wandsworth	262,526	—	64	73	—	7	—	3	26	—	173	11·1	—	9	6	13	3	—	1	—	2	34	2·2	228	15·3	91
Camberwell	261,189	—	61	49	—	6	—	2	21	—	139	6·9	—	19	—	7	15	—	2	—	5	48	2·4	423	21·1	140
Greenwich	160,441	—	40	34	—	9	—	—	21	—	104	7·5	—	10	2	4	11	—	5	—	1	33	2·4	269	19·4	129
Lewisham (excluding Penge)	88,562	—	15	16	—	1	—	1	4	—	37	5·4	—	2	—	1	2	—	—	—	3	8	1·2	119	17·5	125
Woolwich...	41,478	—	25	8	—	—	—	1	4	—	38	11·9	—	18	2	2	—	—	—	—	—	22	6·9	88	27·6	170
Lee	39,717	1	13	12	—	4	—	—	2	—	32	10·5	—	—	1	1	—	—	1	—	1	4	1·3	51	16·7	78
Plumstead	62,531	—	27	14	—	4	—	1	2	—	48	10·0	—	5	1	3	2	—	1	—	—	12	2·5	88	18·3	112
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 30 cases of membranous croup.

† Including deaths from membranous croup.

Asylum Hospitals at the end of February, against 1042, 1066, and 1055 at the end of the three preceding months; the weekly admissions averaged 140, against 155, 151, and 132 in the three preceding months. The prevalence of enteric fever in London during February showed a marked further decline from that recorded in recent months; this disease was proportionally most prevalent in Whitechapel, St. George-in-the-East, Lee, and Plumstead sanitary areas. The Metropolitan Asylum Hospitals contained 84 enteric fever patients at the end of February, against, 155, 116, and 106 at the end of the three preceding months; the weekly admissions averaged 11, against 17 in each of the two preceding months. Erysipelas showed the highest proportional prevalence in St. Giles, Bethnal Green, Limehouse, Rotherhithe, and Wandsworth sanitary areas. The 22 cases of puerperal fever notified in London during February included 4 in Islington, 3 in Wandsworth, 2 in Marylebone, 2 in St. Pancras, and 2 in Camberwell sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the four weeks ending Saturday, February 26th, the deaths of 7399 persons belonging to London were registered, equal to an annual rate of 21·4 per 1000, against 19·0, 21·3, and 22·0 in the three preceding months. The lowest death-rates in the various sanitary areas were 11·5 in St. Martin-in-the-Fields, 13·6 in Hampstead, 14·7 in Stoke Newington, 15·3 in Wandsworth, 15·4 in St. George Hanover-square, and 16·7 in Lee; the highest rates were 26·9 in Strand, 27·4 in Shoreditch, 27·6 in Woolwich, 28·7 in Limehouse, 28·9 in St. Olave Southwark, 29·9 in Holborn, and 30·3 in St. Saviour Southwark. During the four weeks of February 901 deaths were referred to the principal zymotic diseases in London; of these, 373 resulted from measles, 235 from whooping-cough, 165 from diphtheria, 51 from scarlet fever, 45 from diarrhœa, 31 from enteric fever, and 1 from an ill-defined form of continued fever. These 901 deaths were equal to an annual rate of 2·6 per 1000; no death from any of these diseases was registered last month in St. Martin-in-the-Fields or in St. Saviour Southwark; in the other sanitary areas the lowest zymotic death-rates were recorded in Kensington, St. George Hanover-square, St. Giles, City of London, St. Olave Southwark, Lewisham, and Lee; and the highest rates in Hammersmith, Westminster, Bethnal Green, Mile End Old Town, Poplar, and Woolwich. The 373 fatal cases of measles were as many as 235 above the corrected average number in the corresponding periods of the ten preceding years; this disease showed the highest proportional fatality in Hammersmith, Westminster, Islington. Limehouse, Poplar, and Woolwich sanitary areas. The 51 deaths referred to scarlet fever were 25 below the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Fulham, St. Luke, Newington, Wandsworth, and Woolwich. The 165 fatal cases of diphtheria slightly exceeded the corrected average number; the mortality from this disease was highest in Fulham, Westminster, Hackney, Mile End Old Town, Poplar, Rotherhithe, and Wandsworth sanitary areas. The 235 deaths from whooping-cough were 54 below the corrected average number; among the various sanitary areas this disease showed the highest proportional fatality in Hackney, Shoreditch, Bethnal Green, St. George-in-the-East, Limehouse, Mile End Old Town, and Poplar. The 31 fatal cases of enteric fever were 9 below the corrected average number; the highest proportional mortality from this disease was recorded in St. George Southwark and Greenwich sanitary areas. The 45 deaths from diarrhœa were 11 below the corrected average number. In conclusion, it may be stated that the mortality in London last month from these principal zymotic diseases was nearly 18 per cent. above the average, owing principally to the excessive fatality of measles.

Infant mortality in London, measured by the proportion of deaths of children under one year of age to registered births, was last month equal to 143 per 1000. Among the various sanitary areas the lowest rates of infant mortality were recorded in Hampstead, St. Giles, St. Martin-in-the-Fields, St. Olave Southwark, Wandsworth, and Lee; and the highest rates in Westminster, St. James Westminster, St. Luke, Limehouse, St. Saviour Southwark, and Battersea.

THE SERVICES.

NAVAL MEDICAL SERVICE.

THE following appointments are notified:—Surgeons George Gibson to the *Liberty*, Eustace Arkwright to the *Seaflower*, Ernest S. Reid to the *Martin*, Harold E. Fryer to the *Pilot*, Louis E. Dartnell to the *Wanderer*, and Edward F. Power to the *Nautilus*, all lent; Eric E. Kershaw to the *Victory*, additional for the *Research*; and Edward Cuffery to the *Halcyon*.

ARMY MEDICAL STAFF.

Surgeon-Major James McM. Bolster is placed on temporary half-pay on account of ill-health. The undermentioned officers are seconded for service with the Egyptian Army: Surgeon-Captain George A. T. Bray and Surgeon-Lieutenant Charles F. Wanhill. Surgeon-Lieutenant Cochrane has left Woolwich for India.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Colonel Eston, A.M.S., is brought on the Administrative Medical Staff of the Army, vice Surgeon-Colonel Atkins, retired. Surgeon-Captain Maynard is appointed temporarily to act as Second Resident Surgeon, Presidency General Hospital, Calcutta, during the absence, on deputation, of Surgeon-Captain F. O'Kinealy. The services of Surgeon-Major Crowly, A.M.S., are replaced at the disposal of the Military Department.

VOLUNTEER CORPS.

Rifle: 2nd Volunteer Battalion the Duke of Wellington's (West Riding Regiment): Surgeon-Major J. Sutcliffe resigns his commission; also is permitted to retain his rank and to continue to wear the uniform of the battalion on his retirement. 3rd Volunteer Battalion the Duke of Wellington's (West Yorkshire Regiment): Harold Hebblethwaite to be Surgeon-Lieutenant. 5th (West) Middlesex: Joseph Norwood Brown, M.D., to be Surgeon-Lieutenant. 22nd Middlesex (Central London Rangers): Surgeon-Captain G. Herschell, M.D., resigns his commission.

VOLUNTEER MEDICAL STAFF CORPS.

The Manchester Companies: John William Smith, M.B., to be Surgeon-Lieutenant.

BILL FOR THE SANITARY IMPROVEMENT OF BOMBAY.

A Bill of a very comprehensive character for the improvement of Bombay has been introduced and has passed its first reading at a recent meeting of the Bombay Legislative Council. One of the many subjects calling for attention in Bombay is the drainage and the polluted state of a more or less water-logged soil. It is almost an axiom of sanitary science that no more water should be brought into than can be carried out of a city or station. The water-supply for Bombay is, we believe, ample enough, but what becomes of it? Does it not sink into the soil and only serve to increase the amount of the subsoil water? and has not this condition of things been going on for some time? The creation of open spaces in order that the air and sunshine may penetrate, the diminution of overcrowding of buildings and people, and the drainage and improvement of the soil on which the city stands are, it need scarcely be said, points of great sanitary importance. The employment of troops and search parties to hunt out concealed cases of infectious disease and measures for checking the spread of contagion by infected persons and articles are very necessary; but it is, after all, by the removal of the conditions favourable to the growth and development of the micro-organisms of disease that protection of a permanent kind is most likely to be secured.

THE COLD IN PESHAWUR AND THE KHYBER.

The troops encamped in these positions have undergone much hardship during the past winter from cold and exposure, although their health has been good upon the whole. The weather, according to the latest accounts, was breaking. General Sir William Lockhart has been engaged in completing his arrangements for a forward movement in case the Afridis do not tender their submission and come to terms, which it is expected, however, that they will do.

PLAGUE RIOTS AT BOMBAY.

Advices from Bombay state that a serious riot broke out at this town on Wednesday afternoon last. A medical officer was followed to the hospital by a threatening body of

Mahomedan weavers, who afterwards fired the offices and stores of the hospital. Several officers were maltreated and a European plague inspector and three privates of the Shropshire Regiment were stoned to death.

Surgeon-Major-General Cleghorn, the Director-General of the Indian Medical Service, is about to proceed on leave from India for eight months and Surgeon-Major-General Harvey will, it is understood, act for him as head of the Indian Medical Service during his absence.

The Government of India has sanctioned the expenditure of Rs. 24 900 for the extension of the model dairy farm at Umballa.

Correspondence.

"Audi alteram partem."

"THE MIDWIVES REGISTRATION BILL."

To the Editors of THE LANCET.

SIRS,—Mr. Garrett Horder would, I feel sure, desire to give us credit for a genuine attempt to solve a difficult problem, and I think therefore he should credit us with the provisions which appear in the Bill. He thinks the Bill should be stoutly opposed for four reasons—the first, that it would not prevent unregistered women from acting in the capacity of midwives. Parliament will not look at a Bill which legalises a monopoly. Practical legislation is what is wanted, hence no provision to prevent women practising as midwives unless they assume certain "titles" is inserted in the Bill. The next reason he gives is that the Bill does not prohibit midwives registered under it from assuming the title of Licentiate in Midwifery. It is perfectly true that the use of such a title is not expressly forbidden in the Bill, for it would then be merely a question of evading its terms if only such were forbidden as were expressly specified. Clause 5 (*f*) places the approval of the "rules for regulating, supervising, and restricting within due limits the practice of midwives" in the hands of the General Medical Council, and while the Council already imposes a standard for "Licentiates in Midwifery," on the other hand the assumption of such a title would prove at once that the midwife who assumed it intended to step beyond the province assigned to her under the regulations drafted for the special purpose of limiting her to her legitimate sphere, and therefore she would at once be liable to be struck off the register and forbidden to assume even the title of midwife. It would then be for Mr. Horder to prevent her from assuming the title of "L.M." Mr. Horder further objects to the constitution of the Midwives' Board. The only alternative proposal is that all the members of the Board should be elected by, virtually, the general practitioners of the country, whose interests are assumed to clash with those of the midwife. Surely Mr. Horder would consider this equally unfair to the midwife. Let Mr. Horder make some practical proposal for the solution of his difficulty. The last objection raised is that it would be impracticable for a medical officer of health—e.g., of a large town—to supervise all the midwives in his district. The clause to which Mr. Horder refers is as follows: "Every local sanitary authority throughout England and Wales shall on the passing of this Act appoint its medical officer of health *or other registered medical practitioner or practitioners* as the local supervising authority over midwives in the sanitary district," &c. If, therefore, the medical officer of health cannot or does not care to supervise the midwives in his district the sanitary authority has power to employ any number of medical men it may think fit for this purpose. Surely this is sufficiently elastic. For fuller details as to the policy under which the Bill has been drafted may I refer Mr. Horder to the current number of the *Medical Magazine*, in which an article is published under my signature.

I regret to see that Mr. Sers still does not believe in the great loss of life which takes place yearly at the hands of untrained midwives. I feel sure that if he realised that about 1000 mothers and probably 10,000 children lose their lives annually at their hands he would feel that there was some justification for the Bill without including the mass of suffering consequent upon such attendance. The "scheme of registration is an experimental process" just in the same way as the administration of a dose of castor oil is an experiment. Both are based on the result of preceding experiments in the same line; both may fail through the dose not being strong enough or through the result being disastrous. But by such "experiments" alone are we able to test the requirements of the case. The weight of evidence on all counts is against Mr. Sers.

I am, Sirs, yours faithfully,

F. R. HUMPHREYS, L.R.C.P. Lond.,
Honorary Secretary Midwives Bill Committee.

Buckingham-street, Strand, March 5th, 1898.

To the Editors of THE LANCET.

SIRS,—Your correspondents Mr. Rowland Humphreys, honorary secretary of the Midwives Bill Committee, and Mr. J. H. Johnstone, M.P., one of the backers of the Bill, whose letters appear in THE LANCET of Feb. 26th, invite criticism of it; therefore, while confining myself to one, but a very important, issue of the Bill I propose to particularly draw their attention and that of the profession to the inefficient penal clauses.

The section directed against non-registered persons is similar in construction to Section 40 of the Medical Act, which, as is well known, proves itself wholly ineffectual to stop unqualified practice so long as the unregistered persons do not themselves take protected "names or titles," no matter by what designation other people refer to them. Within my own personal knowledge there are several women in this city alone, called by others, known and largely employed as midwives, who do not describe themselves by taking up "the name or title," and that which has occurred in the past may and will occur again if the opportunity is offered; consequently it is reasonable to assume that if this Section is passed standing as it is it will be absolutely useless. It is needless to point out the futility of supplementing qualified medical work by examined midwives if they are simply to be a new creation wedged in between the registered medical practitioner and an uncleanly and ignorant lower stratum left to arise afresh outside the register and beyond the control of the law courts or of the proposed Midwives' Board. The prohibition of practice as well as the assumption of a name or title is absolutely essential if an attempt is to be made to attain the alleged objects of the Bill. The clause referred to, Section 3, subsection 2, reads—stripped of dates, &c.—as follows: "Any person who not being registered shall take or use the name of midwife," &c., shall be liable to a penalty. The corresponding clause in the draft Obstetric Nurses Bill it will be admitted is more adequate; it reads practically thus; "Any person whose name is not on the register who shall take or use the name of midwife, &c., or who habitually or for gain shall attend or undertake to attend lying-in-women," shall be liable to a penalty—"provided always that nothing herein contained shall apply to any person attending a woman during labour in a case of emergency when the services of a person registered under the Acts or of a duly qualified medical practitioner are not available." Here both assumption of name and practice are dealt with, and its superiority over that in the bill before Parliament cannot be gainsaid by those who have the protection of the public, to say nothing of that of the profession, at heart. Again subsection 4 of Section 2 of the Bill provides that "The certificate of registration shall not confer upon any woman any right or title to be registered under the Medical Acts in respect of such certificate or to assume any name, &c., implying that she is by law recognised as *a licentiate or practitioner in medicine or surgery* or that she is qualified to grant any medical certificate or any certificate of the cause of death." An examination in midwifery under the Medical Acts is only granted to an individual who has gone through a long course of all-round training and reading and it also includes the allied subject of gynæcology, but a person registered under this Bill by inference is not merely a "registered midwife," but a full "*licentiate or practitioner in midwifery*," because it will be noted the word midwifery in the above-quoted prohibition clause is deliberately omitted. This is prejudicial and unfair to the professional status. Moreover, legal doubts might even arise as to whether any rules which the proposed Board might impose upon midwives in attempting to limit their practice to the lying-in state alone might not be *ultra vires*. Further, where in the Bill is the penalty clause for a breach of this subsection? Why is not the liability to a legal fine also

inserted in it and a declaration that such liability shall be in addition to the consequences following the breach of any of the rules of the Board relative to practice? Under such an amended proviso an aggrieved person, a local practitioner or society, could prosecute, and upon conviction the Board would practically be compelled to take notice of the offender—in fact, in the majority of cases it would relieve the board of a considerable responsibility and the trouble of investigation by the fact of the conviction in a court of summary jurisdiction—speedy and sure—having taken place before it would be called upon, perhaps months after, to adjudicate by way of suspension or removal from the register. An alteration of the sub-section might be suggested somewhat as follows:—"Registration under this Act shall not confer upon any woman any right or title to be registered under the Medical Acts or to practise as though she was or to assume any name, title, or designation implying that she is under the *Medical Acts* recognised as a licentiate or practitioner in medicine, surgery, *or midwifery*, or that under the said Acts or otherwise she is qualified to grant any certificate, including any death certificate, or that she is recognised by law other than as a registered midwife, and any woman on the register acting in contravention of this sub-section by assuming any name, title, or designation as though she was registered under the Medical Acts, or by granting any such certificate as aforesaid, or by practising medicine or surgery, or by practising midwifery further or otherwise than as a registered midwife, shall be liable on summary conviction for each offence to a fine not exceeding five pounds, provided always that such liability to a penal fine shall be in addition to and not in substitution for any act that may be done or any proceedings that may be taken by the Midwives' Board under the rules and regulations for the time being in force for the suspension of any woman so registered or for the removal of her name from the register."

Lastly, the Bill is absolutely silent on the question of midwifery training. Is it intended that such should be left to arrange itself? or is it intended to insert powers for the Board to arrange this by rules and regulations to be formulated by it? Either way it may be taken that such provisions alone on so important a subject will not be satisfactory to medical or public feeling. One matter must be insisted upon and that is that corresponding to the disability of medical men to employ unqualified help in their practices, homes, institutes, guilds and other such-like places, whether in the nature of co-operative bodies or of universal providers, shall not arise to be happy baiting grounds for the reception of young women who have become "nurse-costume struck" or who have kicked against the restraints of home or of other occupations, to be "trained" by "registered midwives" to do unqualified work at the risk of the lives of the trusting poor intended to be protected by the passing of this Bill. Nothing short of a penal section in the Bill, permanent in its nature and not of the substance of "rules and regulations for the time being in force," declaring absolutely that no registered midwife shall keep, employ, or use unqualified assistants, by whatever name designated, will meet the demands for public protection. An aggrieved individual must have the power to set the law in motion quickly without waiting for delayed Board meetings held months after and miles away from the place of offence; then upon this firmer foundation "rules and regulations" may more properly be laid down.

These are a few questions on the penal clauses which claim the serious attention of the promoters seeking the public weal and of the profession which, yielding to none in its sympathy for the poor, has also in its keeping the dignity and proper protection of its calling.

I am, Sirs, yours faithfully,

Leeds, Feb. 26th, 1896. J. H. WIGHAM.

"THE ADMINISTRATION OF ANÆSTHETICS."

To the Editors of THE LANCET.

SIRS,—In reply to Mr. Paul's letter in your issue of March 5th I think there can be no doubt that the method which he uses has much to recommend it. We appear to hold very similar views. We both regard it as important to administer ether during the stage of muscular rigidity. We are also in accord as to the suitability of chloroform after the stage of rigidity has passed over. The only difference between us is that Mr. Paul employs chloroform at the commencement of the administration whilst I prefer, whenever circumstances permit, to use nitrous oxide or the A.C.E. mixture as the preliminary anæsthetic. The sequence of A C E.—ether—chloroform, to which I referred in my lecture, is, as Mr. Paul will see, almost identical with that which he employs. I have always hesitated to use chloroform in a routine way for inducing anæsthesia, although I must confess I have never seen a single instance in which after a few breaths of this anæsthetic and before the stage of rigidity has been reached any alarming symptoms have arisen. But as we have records of fatalities at the very outset of chloroform administration I think it better to use some other anæsthetic which will be equally pleasant to the patient and as satisfactory as, or even more satisfactory than, chloroform from the anæsthetist's point of view. I am glad that Mr. Paul has drawn attention to a point which I did not allude to in my lecture. He finds that by giving a full dose of ether with the chloroform just before the struggling stage this stage is almost invariably prevented. I have elsewhere referred to this in connexion with the use of A.C.E. and ether in succession. If anæsthesia be partly induced by the A.C.E. mixture and just as the stage of rigidity is commencing an Ormsby's inhaler charged with ether be then gradually applied, the patient will quickly sink into tranquil anæsthesia in a way that is little short of remarkable. Why struggling should thus be prevented it is difficult to say. Possibly the limitation of oxygen and the re-breathing of carbonic acid, both of which events must follow the application of the close ether inhaler, are responsible. Although Mr. Paul's method differs very slightly from those I have advocated it is satisfactory to me to think that we agree on main principles, and I am quite sure that by anæsthetising on such principles chloroform accidents may be rendered far less frequent than they have been.

I am, Sirs, yours faithfully,

FREDERIC W. HEWITT.

George-street, Hanover-square, W.

"THE USE OF A SPLINT AFTER REMOVAL OF THE BREAST."

To the Editors of THE LANCET.

SIRS,—I am pleased to learn from Dr. Priestley Leech's letter in your issue of March 5th that he has tried the method of keeping the arm at a right angle to the body after removal of the breast. I have at no time insisted that a rectangular splint is necessary to attain this object, but I believe that the patient will be more comfortable with a splint than without one for the first week or so.

Dr. Priestley Leech states that he did not in his three cases remove the underlying pectoralis major. Until the recent discussion at the Royal Medical and Chirurgical Society I was under the impression that this was the usual course pursued by modern surgeons. There are at least three objects attained when this course is adopted—(1) a very much larger amount of skin can be removed and yet the edges of the wound will accurately come together; (2) the axilla can be cleared out more rapidly and, what is more important, more thoroughly; and (3) the removal of a frequent seat of recurrence can be effected.

Personally I do not believe there is more appreciable shock in this operation than in the incomplete one. I do not employ drainage as a rule, and by the eighth day the wound is healed up.—I am, Sirs, yours faithfully,

EDWARD COTTERELL.

West Halkin street, March 8th, 1898.

"REMARKABLE MISADVENTURE WITH CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—*Apropos* of the "Remarkable Misadventure with Chloroform" at the Catholic Hospital at Herne, in Westphalia, mentioned by your Berlin correspondent in your issue of Feb. 26th, p. 611, the following experience as occurring to myself on Monday evening, Feb. 21st, may be interesting as another example of the decomposition of chloroform

vapour in the presence of artificial light. I was asked by a colleague (Mr. C. H. Harding) in the morning to see a case of hernia which he had been unable to reduce, and finding it strangulated we informed the patient of the nature and danger of the situation. He was unwilling for any operative interference at first, but realising that it was that or death he agreed that if there were no abatement of the symptoms in the evening he would undergo the operation. The room was small and without a fireplace and with no ventilation. It was warmed by an oil stove and illuminated by an oil lamp and a candle. The operation was a prolonged one, owing to the size of the hernia (nearly a foot of bowel in the sac and a large quantity of omentum which was ligatured in several sections and cut off). The patient was a bearded man and as so constantly occurs with these patients a large amount of chloroform was required. On the drop bottle being replenished some half ounce was spilt. Almost immediately a most pungent, disagreeable smell was noticed by myself which seemed to attack the whole respiratory tract from the nose to the middle of the sternum. My colleague, who was anæsthetising, next said he was becoming overpowered and the nurse who was assisting me was seized with a violent attack of coughing. After the administration of stimulants my colleague felt better; and the window was opened and some of the pernicious fumes let out. Mr. Harding was the first to throw off the effect, having quite recovered the next day. The irritative effect lasted four days upon myself, during which time I could not take a deep breath without pain at the middle of the sternum and a fit of coughing. The effect lasted longest on the nurse, who was not clear five days after the operation. The room next morning was pervaded by a strong odour of chlorine, which my colleague compared to bleaching works. The amount of chloroform used was somewhat over three ounces and about half an ounce was spilt. The chloroform in question was prepared by Messrs. Duncan, Flockhart and Co., and had no odour of any free chlorine. In reading the Herne Catholic Hospital case we all came to the conclusion that we had had a very lucky escape.

I am, Sirs, yours faithfully,

Whittlesea, Feb 27th, 1898. JOHN J. WADDELOW.

"CHARGES TO PATIENTS IN ISOLATION HOSPITALS."

To the Editors of THE LANCET.

SIRS,—I have read your criticism of Dr. Meredith Young's paper and letter[1] with some surprise. I have attended scarlet fever patients for nearly forty years and superintended an isolation hospital for several years, and can endorse his statement that efficient isolation in private houses is impracticable even in what would appear very favourable circumstances. It is in consequence of this knowledge having been thrust upon them by experience that ratepayers are willing to provide themselves with means of isolation elsewhere and for that purpose find money for erecting and maintaining a suitable building. It appears to me an absurdity that the unfortunate members should be made to pay twice over. It is only those in distress for whom the ratepayers build and maintain the workhouse, to which all who are unfortunate enough to require it are entitled to admission. It is equally absurd to ask recompense from those who require admission to their own hospital as to those who require admission to their own workhouse.

I am, Sirs, yours faithfully,

J. ADAMS, M.D. St. And.,
Medical Officer of Health, Barnes District,
Barnes, S.W., March 5th, 1898. Richmond Union.

"A DEGREE FOR BRITISH PRACTITIONERS."

To the Editors of THE LANCET.

SIRS,—As your notice of my little book on the above subject suggests that my statement that a fluent candidate at the M.D. examination at the University of Brussels makes a better impression by occupying as long a time as possible in giving a systematic and complete answer to a query than does the less self-possessed candidate who gives incomplete and fragmentary replies, and has therefore to deal with a far larger number of questions in the allotted time "surely cannot really be the case," I beg the favour of your insertion of this further comment. That my statement is a fact will be borne out by any candidate who has been present at one of the examinations, and I think there can be little difficulty in defending the principle involved. The Belgian professors are not examining raw students, but men duly qualified in Great Britain to practise medicine, surgery, and midwifery, and surely when asked a comprehensive question such as "What do you know of enteric fever?" a man cannot do justice to his knowledge and his ability as a "doctor" unless he considers the nature, pathology, symptoms, course, treatment, and prognosis of the disease in due order. I maintain that a man who can do this impresses the examiner with his fitness to practise his profession with credit thereto, whilst the fragmentary and incomplete replies of the less able candidate make him appear more like an unfledged student than a practitioner.

I am, Sirs, yours truly,

CHARLES REINHARDT.

South Stoke, Reading, March 6th, 1898.

*** The words "surely this cannot be the case" referred to Dr. Reinhardt's statement that it was impossible for an examiner to interfere when a candidate had once embarked on his answer.—ED. L.

MR. HORSLEY AND THE BUSINESS OF THE GENERAL MEDICAL COUNCIL.

To the Editors of THE LANCET.

SIRS,—Mr. Horsley's letter in the columns of THE LANCET of the 5th inst. gives further evidence of the obstructionist tactics with which his attempts at reform are systematically met. As Mr. Horsley was elected to the Council precisely that he might advocate a less apathetic policy and a less autocratic government, the electorate should take steps to show the Council that Mr. Horsley has the full approval and absolute confidence of his constituents in the fearless and straightforward policy which he has adopted. This end can perhaps best be attained by a public meeting of the profession before the May session of the Council. There is not the least doubt that such a meeting would cordially endorse Mr. Horsley's action and effectually prevent any affectation that he lacked the "mandate" of the electors. The ground would thus be cleared and a plain issue raised. Those who support the present unconstitutional methods of procedure or non-procedure and those who are determined to suppress every attempt at reform will have the advantage of knowing that their action is opposed to the wishes of the profession whose interests they are supposed incidentally to protect. Those also, if any, who doubt if Mr. Horsley has the support of the general practitioners will have their doubts resolved.

I am, Sirs, yours faithfully,

Frant, March 5th, 1898. HAMILTON HALL.

HOSPITAL ABUSE IN GLASGOW.

To the Editors of THE LANCET.

SIRS,—Would you allow me to correct a trifling misapprehension on the part of your Special Commissioner as reported in your last issue? My friend Dr. Erskine advocates the municipalisation of hospitals. *I do not.* What I maintain is that our parochial (Poor-law) hospitals are our State hospitals and that they ought to administer to the medical and surgical necessities of the poor. Outside of this the hospital question is one of private and commercial enterprise. People who despise the State hospitals for their necessities ought not to be commiserated when *professors* in Glasgow compete for clubs for the remuneration of 2*s.* 6*d.* per annum!

I am, Sirs, yours faithfully,

Glasgow, March 6th, 1898. D. CAMPBELL BLACK.

"THE TREATMENT OF BURNS AND OTHER SURFACE WOUNDS."

To the Editors of THE LANCET.

SIRS,—My attention has been called to a letter in THE LANCET of March 5th, p. 677, under the above heading. The writer, Dr. G. Archdall Reid, is quite right in thinking

[1] THE LANCET, Feb. 26th, p. 593, and March 5th, p. 676.

that the method described by him has been tried before—in fact, I myself strongly advocated its use in THE LANCET of Nov. 14th, 1896, p. 1373. I am very glad Dr. Reid has found it so satisfactory, as I firmly believe that for burns, skin grafting, and surface wounds generally it only wants to be tried to be far more extensively used than it is now. The principle can be adopted even in cases where the burn extends right round the limb, at any rate in children, by slinging the limb as for a fracture treated by Bryant's method and fixing a sort of meat-safe cage over it. If, too, in suitable cases the part affected is at once thoroughly cleansed with antiseptics most if not all of the dangers of sepsis and absorption of poisonous substances may be done away with. The part is kept clean without fear of absorption of the lotions used.

I am, Sirs, yours faithfully,

King's College Hospital, March 7th, 1898. J. R. BENSON.

TEST-TUBE REACTIONS BETWEEN COBRA POISON AND ITS ANTITOXIN.

To the Editors of THE LANCET.

SIRS,—We beg leave to correct an error in your report of the communication read by us before the Pathological Society of London on March 1st. The quantity of serum necessary to neutralise 0·1 milligramme of cobra poison should read 0·1 c.c. and not 1·0 c.c. Further, the explanation offered of the fact that multiple doses of pyocaneous toxin are not neutralised by corresponding amounts of serum is Wassermann's, not ours.

We are, Sirs, yours faithfully,

J. W. W. STEPHENS,
March 8th, 1898. W. MYERS.

*** Our report was perfectly correct, but a decimal point escaped impression.—ED. L.

"THE FELLOWSHIP OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON."

To the Editors of THE LANCET.

SIRS,—Although one cannot expect to do much with an unreformed corporation whose proceedings are kept secret under oath, yet I was glad to read your annotation on the subject of advancement to the Fellowship of the College of Physicians. Any Member of the College who gets elected as an assistant physician (unless he is an obstetric) to a London hospital, and who, as such, "devils" for the physicians, is just as certain of his Fellowship as if he proceeded to that higher distinction at his will and at his own time. But there the certainty of the Fellowship ends: no matter whether a Member has "distinguished himself in medicine" in the provinces or in any of the public services, unless he has the stamp of a London hospital staff he might as well have contented himself with any of the minor medical qualifications. He will never be a Fellow, or if he is it will be when he is of a certain age and reputation and can very well afford to care no more for the empty honour.

I do not begrudge the young London physician anything which enables him to make a better living than he otherwise would do or which ornaments the prospectus of the London hospital schools. The young London physician is handicapped enough as it is by having to live in a style far beyond his means; but there might be some consideration shown to men in other departments of medicine who from whatever standpoint you like to regard them are as worthy as their London *confrères* and are as likely from their social position to maintain and uphold the dignity of the College and, if the whole truth were told, have distinguished themselves in the practice of medicine quite as much as the young gentlemen who see out-patients and make themselves generally useful to their seniors at the London hospitals in the certain hope of being promoted by them to the Fellowship.

The boycotting of obstetric physicians—of asylum physicians—men who have greater responsibilities and the medical care of more patients than any hospital physician in London, must have been observed by the profession at large. But owing to the secrecy which is maintained in the College deliberations the part which personal spite plays in preventing a man from obtaining his Fellowship may be known only to a few. There have been Fellows whose love of justice has been in conflict with the obligation of their oath of secrecy, and they have told a tale which showed how entirely at the mercy of one individual is the chance of a Member obtaining his Fellowship if anything is said against him *in camerâ*. So petty a thing, too, as a man's asking a personal friend to nominate him is quite sufficient to damn him in the eyes of the immaculate censors.

I am, Sirs, yours faithfully,

M.R.C.P. (AND LIKELY TO REMAIN SO).

March 8th, 1898.

TRANSPOSITION OF THE HEART ALONE.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Feb. 26th, at page 607, Mr. W. H. Brown, of Leeds, mentions an interesting post-mortem examination in which the heart was found on the right side and was the only transposed viscus. Transposition of the abdominal viscera generally and even of the lungs have frequently been noticed, but a transposition of the heart alone is extremely interesting. There is, unfortunately, no mention in Mr. Brown's note of whether the aorta turned to the left as in mammals or to the right as in birds. The commonly accepted explanation of the transposition of unsymmetrical viscera is the retention and development of a right aortic arch instead of a left one, and it would add much to the value of the case if Mr. Brown could give us some further particulars of the relations of the cavities of the heart, the pericardium, the aortic arch, and the position of the aortic trunk in regard to the spinal column.

I am, Sirs, yours faithfully,

March 8th, 1898. ANATOMIST.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Plague in Bombay.

I REGRET to have to record the death from plague of Miss Morgan, one of the English nurses who had been on duty at the General Plague Hospital at Poona, and also that Dr. H. W. Bruce, on duty at Malegaun, has had a severe attack of plague. He is fortunately now out of danger. A European nurse at the Parsee Plague Hospital has also contracted the disease. It would appear that the supposed immunity of Europeans is perhaps questionable, as when exposed to infection the frequent occurrence of cases proves their vulnerability. Under ordinary circumstances they are placed under slight dangers of infection compared with natives, while their mode of life also safeguards them from contracting, or succumbing to, the disease.

An important scheme of great magnitude is about to be carried out in Bombay. Four camps have been prepared with accommodation for nearly 20,000 people. It is proposed to empty one of the most populous and most infected districts of the city. The most insanitary houses will then be opened up by the military engineers and the whole will be thoroughly disinfected and limewashed. After about a week the people will be permitted to return to their homes and then another district, if necessary, will be treated in the same way. This method has been adopted in several other towns with great success and it seems a great pity that such a move was not taken here much earlier.

The extent and virulence of the epidemic have been rising week by week until last week 2195 deaths were recorded, of which 1257 were officially returned as due to plague. This mortality equals a death-rate of over 135 per 1000 per annum. As the returns show great increases under the heads of fevers and phthisis it is reasonable to suppose that the number of deaths from plague has been very much larger. There is fortunately some indication that the epidemic has reached its height. In addition to plague a large number of cases of relapsing fever are admitted into the fever hospital. Many interesting cases illustrate that the two diseases can run concurrently in the same patient. The mortality of relapsing fever is only about 10 per cent., whereas that of plague at the present time is nearly 80 per cent. The prognosis when the two diseases occur together does not seem to be rendered more grave. Small-pox is prevalent and a large number of cases of chicken-pox are also to be met with, but there are no deaths from the latter disease.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

New Home for Parish Nurses.

ABOUT eighteen months ago the select vestry decided upon building a new home for the nurses of the Liverpool Workhouse, of whom there are about a hundred. The building has just been completed and will be ready for occupation in a month or so. The estimated cost of the home, which will accommodate sixty nurses, is £11,350 inclusive of furniture and fittings. The building has been designed by Mr. Henry Hartley, F.R.I.B.A., and comprises basement, ground floor, and first and second floors, and is very usefully laid out. The basement contains a dining hall at the west end 51 ft. 6 in. by 29 ft. 6 in., with lavatory, cloak-rooms, and service-room immediately adjoining. At the north end of the building are the kitchen, scullery, pantries, servants' hall, and other domestic arrangements for the cooking department and servants. On the ground floor there are two large sitting-rooms, one 30 ft. by 24 ft. and the other 30 ft. by 28 ft. Arrangements have been made whereby the partition between the two rooms can be readily removed, being constructed with Stone's patent sliding shutters. A room 52 ft. by 30 ft. can be thus formed for lectures or other purposes where meetings of the nurses are required. On this floor there are laboratories, matron's room, and eighteen cubicles or bedrooms. On the first and second floors there are fifty-six bedrooms with linen-closets and store-rooms. There are bathrooms on each floor. The lavatory arrangements are placed in a sanitary tower on the south side of the building which is isolated from the main building by a ventilated corridor. The general arrangement of each floor is a central corridor 6 ft. wide with the various cubicles or other apartments leading off right and left. At each end of the building is a stone staircase communicating with the various floors and approached from the hospital side by an external entrance. The new home has communication on the ground and first floors with the existing nurses' home by means of a glass-covered corridor, so that the whole nursing staff will be brought into direct communication. The whole of the premises are lighted by electricity and heated throughout with hot water, the heating chamber being placed at the lower part of the sanitary tower.

Stanley Hospital.

Mention was made in THE LANCET of the intention of the corporation to station a horse ambulance at the Stanley Hospital in addition to other city hospitals; in view of these arrangements the committee of the hospital have decided upon opening the Sheldon and Kellett Smith wards, which hitherto had been unoccupied. The furniture for these wards has been generously provided by an old friend of the hospital at a cost of £250. The committee have made an appeal for increased support to enable them to meet the additional expenditure incurred.

Inquest on a Museum Specimen.

About a month ago a specimen fœtus which had been in use for a number of years for purposes of illustration in the physiological laboratory of University College was found not to have been hermetically sealed in the containing jar, with the result that the methylated spirits had partly evaporated, causing an unpleasant odour to exude from the jar. Under these circumstances the fœtus (a stillborn conception of seven months) was placed in an outer yard with high walls surrounding. By some unknown means the fœtus was thrown away into the College ashpit, the *débris* from which was in the ordinary course removed to the city destructor. When about to dispose of the load the man in charge discovered the dead body of an "infant" in the rubbish. The matter was duly reported to the city coroner, who upon investigation by his beadle found the particulars to be as stated above. Yet with all these facts unreservedly placed before him by the College officials the coroner not only decided upon holding an inquest but also ordered a post-mortem examination of the fœtus which, as stated by the officials of the physiological department, was found to have been stillborn and only a seven months' conception. In the light of the explanations made to the coroner's beadle as to the use made of the preserved fœtus for purposes of demonstration the general impression prevails that an inquest might without injury have been withheld and that far too much has been made of a very small affair indeed.

The New Coroner of Birkenhead.

Mr. Cecil Holden, who was recently appointed Coroner of Birkenhead in the room of the late Mr. Henry Churton, held his first inquest at Birkenhead on Feb 26th. Mr. Holden, unlike his predecessor, is a solicitor, and this fact attracted many of his cloth to offer their congratulations. Mr. Cornwall, J.P., a medical practitioner, who was also present, congratulated the new coroner upon his election and expressed his approval of the appointment of a legal coroner in that "a medical man was too much inclined to call in expert evidence and on medical points to be both judge and jury; whereas a legal coroner was able to sift the evidence and to depend in medical matters upon skilled medical men who had experience in poisons and other matters." It is open to question how far these allegations against the fitness of a medical man for the office of coroner can be sustained; in fact, some of the best coroners in the kingdom belong to the medical profession and Mr. Cornwall would have done better in merely congratulating the new coroner upon his appointment (where no doubt he will prove himself very capable), omitting his remarks derogatory to the qualifications of medical men for the office, such remarks being contrary to the well-sustained opinions of many of his medical brethren.

New Infirmary for Toxteth.

A valuable addition to the accommodation for the sick poor of the Toxteth Union has just been completed. The new infirmary contains 412 beds, an administrative block, and a nurses' home. A well-appointed tile-lined operating-room is provided and is in the centre of the building readily accessible from all parts. An ophthalmic room is also provided. The administration block is centrally situated and is in direct communication with every ward; it includes among other arrangements a large dining-room for the staff, a well-fitted dispensary, and rooms for the lady superintendents and resident medical officers. The infirmary so far is intended for men only, a further addition for females being in contemplation.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

University of Glasgow.

THE Queen has been pleased, on the recommendation of the Secretary for Scotland, to signify her approval of the appointment of Professor John Glaister, M.D., to the vacant chair of Forensic Medicine in the University of Glasgow. Dr. Glaister is a graduate of the University in which he now becomes a professor; he is also a Fellow of the Faculty of Physicians and Surgeons of Glasgow and a Diplomate in Public Health of the University of Cambridge. For some years he has taught the subject of Forensic Medicine in St. Mungo's College, Glasgow, in which institution he has also taken charge of the Public Health Laboratory. He is an examiner in the same subjects on the Corjoint Board for Scotland and has for some time acted as police surgeon for one of the Glasgow city districts. Recently he was elected a Fellow of the Chemical Society and a Fellow of the Royal Society of Edinburgh. He is also a Fellow and member of council of the Royal Institute of Public Health, a member of the council of the Sanitary Association of Scotland, and president of the sanitary and social economic section of the Philosophical Society of Glasgow. He has written extensively on the subjects which he is now called upon to teach in the University and his book on "William Smellie and his Contemporaries," published in 1894, is well known. Professor Glaister has taken a prominent part in local public life and in numerous discussions on university questions has been one of the most conspicuous advocates of the policy of reform.

Faculty of Physicians and Surgeons, Glasgow.

Mr. James Grant Andrew, M.B., C.M. Glasg., having passed the necessary examinations has been admitted a Fellow of the Faculty.

St. Mungo's College, Glasgow.

At the March meeting of the Students' Society Professor Swanson delivered a lecture, illustrated with limelight views

of various cliniques, on "Medical Education in Russia." Professor Swanson read a letter which he had received from Professor L. Levschine, director of the Surgical Clinique, Moscow, in which the director expressed his gratification at the effect produced on the minds of the visitors to the late Congress by the evidences of medical activity which Russia now presented and offered the assurance that "we will accept your countrymen who may come here to study with the utmost cordiality and affection."

Glasgow Humane Society.

Dr. Alexander Robertson, who has for ten years acted as secretary of the society, has found himself compelled by the pressure of other work to resign office and the council, in accepting his resignation, have expressed their high appreciation of his unwearied devotion to the work of the society and their regret that he should have found it impossible to continue to serve the society as secretary.

March 9th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Local Government Bill for Ireland.

THE Committee of Council of the Irish Medical Association met at the Royal College of Surgeons on March 8th in order to consider the following business—viz., the provisions of the Local Government Bill affecting the medical profession. The grand jury for the County Monaghan met on the 4th inst. and passed the following resolution unanimously: "We, the grand jury of the County Monaghan assembled at the spring assizes, 1898, beg respectively to call attention to the fact that in the Local Government Bill now before Parliament no provision is made for county infirmaries or fever hospitals. We consider the matter of such urgency that we believe the omission must have been an oversight on the part of the framers of the Bill. We trust, therefore, that they will remedy it at the proper time." In reference to lunatic asylums the grand jury of the County Longford passed unanimously a resolution: "That the Government, in order to give relief most urgently required by the cesspayers all over Ireland, should take over entire charge of Irish lunatic asylums in the same way that they have taken over the prisons, so that the Irish asylums should for the future be wholly maintained at the cost of the State as an Imperial charge.

"Cancer Curers" in Ireland.

In the *Irish Times* of March 5th, a long letter appears from Lord Maurice Fitzgerald, of Johnstown Castle, County Wexford, warning the people and peasantry to avoid the "cancer curers" so numerous in Wexford. If persons of influence throughout the kingdom would follow Lord Maurice Fitzgerald's example, and thus warn their less instructed neighbours of the perils of quackery, they would be conferring a great boon on the community.

The Meath Hospital.

A very successful matinée was given at the Empire Theatre on March 5th, in aid of the funds of the Meath Hospital and County Dublin Infirmary, under the distinguished patronage of their Excellencies the Lord-Lieutenant and the Countess Cadogan, Field Marshal Lord Roberts, V.C., and Lady Roberts, and Major-General Gossett, C.B., the officer in command of the Dublin district.

Water-supply for Coleraine.

Mr. Atton, Chief Engineering Inspector of the Local Government Board, held an inquiry in Coleraine on March 2nd concerning the application of the Coleraine Town Commissioners for sanction to a loan of £5000 for the purpose of providing an additional water-supply for the township. No opposition was offered to the scheme. The proposed reservoir will contain 4,000,000 gallons and the promoters counted upon a supply of about 70,000 gallons per diem. The supply would enable the highest cisterns in the town to be supplied. The matter now rests in the hands of the Local Government Board.

Nurses for the Sick Poor in Belfast.

At the annual meeting of the Society for Providing Nurses for the Sick Poor held on March 2nd in Belfast the report showed that the nurses paid 18 955 visits and that 710 nursing requisites (such as beds, armchairs, air-cushions, &c.) were lent. There is a balance in the bank of £1082 12*s.* 3*d.* to cover the expenses of 1898 and also a sum of £210 to be invested.

The Ulster Medical Society.

The March meeting of this society, which was largely attended, was held in the Pathological Laboratory, Queen's College, Belfast, on March 3rd, the President (Dr. J. A. Lindsay) being in the chair. Papers were read by Professor Symington on Cranio-cerebral Topography (with lantern and other illustrations); by Dr. Lorrain Smith on the Pathological Effects of Breathing Oxygen at High Pressure (with demonstrations); by Dr. Cecil Shaw on Sympathetic Ophthalmia; and by Dr. Tennant on Degeneration and Necrosis in Tumours (with microscopic specimens). Demonstrations were given by Professor Thompson on a Method of Showing the Effects of Peptone and Albumoses on the Kidney; by Professor Sinclair on (*a*) Subcutaneous Epithelial Tumour of the Neck and (*b*) Tumour of Kidney; by Dr. Lorrain Smith on Museum Specimens Preserved by the Formalin Method; by Dr. McKisack on a Series of Microscopic Specimens from a case of Malignant Structure of the Intestines; and by Dr. Houston on a Rare Form of Epithelioma of the Skin.

Omagh Lunatic Asylum.

A special meeting of the Governors was held on March 4th to consider the report of the committee appointed to draw up recommendations on the reports made by the sanitary expert to the Inspector of Lunatics and by Dr. Courtenay and Mr. W. Roberts. The inspection arose from complaints made by the resident medical superintendent as to the insanitary state of the house. The high death rate existing during 1897 was owing to an epidemic when 96 patients had died. The committee recommended that instead of the present mode of appointing attendants and nurses applications for appointment to all vacancies on the staff, excluding the medical assistant, matron, clerk, storekeeper, and land steward, should be accompanied by the usual testimonials and addressed to the resident medical superintendent, who after a personal inspection of the applicants should recommend for appointment those who were best fitted for the position. A warm discussion took place as to who should make appointments and it was finally agreed that the appointment of anyone from the supplemental list would depend upon their being physically fit for appointment, and that the resident medical superintendent should fill from the supplemental list any vacancy that might be created on examination, the examination to be held on the day of appointment. The committee approve of Dr. O'Farrell's recommendation to appoint a committee of Governors to inspect the house at least once a month. The consideration of that part of the report which referred to the insanitary state of the house was put off for the present. Dr. McKelvey was elected medical officer in room of Dr. Moore resigned.

An Interesting Medico-legal Case.

A case has just been tried at the Limerick Assizes which raised some interesting medico-legal questions. A man named Evans was charged with the murder of his wife. Soon after the deed had been done Evans was arrested, but as he was found to be insane he was removed to the district asylum. When the case came up for investigation at the assizes a jury was empannelled to decide in the first instance whether he was in a condition to plead. Mr. O'Neill, resident medical superintendent of the asylum, stated that the mental condition of the prisoner had considerably improved and that he was in a condition to plead and appreciate what went on in court. Mr. O'Neill, in reply to prisoner's counsel, stated that the prisoner was still partially insane and, answering a question of the judge, said he was not in a condition to be discharged from the asylum, but added that he now had a lucid interval and was in a position to instruct his legal advisers. Accordingly the jury brought in a verdict that the case should proceed. The judge instructed the jury as to the law bearing on such cases and in the course of his charge remarked that it was a melancholy thing that the police-sergeant as far back as 1892 charged this man with being a dangerous lunatic, but the magistrates were not quite satisfied. The jury brought in a verdict that the prisoner was insane at the time he killed his wife and the usual order for his detention was made.

Dinner and Presentation to Dr. Oakshott.

On Thursday last a farewell dinner was given at the Imperial Hotel, Cork, to Dr. Oakshott, senior assistant

medical officer of the Cork District Asylum, on the occasion of his departure to take up the duties of medical superintendent of the Waterford District Lunatic Asylum. The chair was occupied by Dr. Oscar Woods, medical superintendent of the Cork Asylum. The following day Dr. Oakshott was the recipient of an address and handsome presentation from the officials and attendants of the Cork Asylum.

March 8th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Suprarenal Extract in Addison's Disease.

AT the meeting of the Hospitals Medical Society held on Feb. 25th M. Becliere showed a young man, aged twenty-eight years, suffering from tuberculosis, but without any marked pulmonary lesions. In addition he had at one time all the symptoms of Addison's disease, but he had lost all these in a short space of time and had remained free for the space of three years. The chief point of interest in this case was that the patient had been treated with suprarenal extract administered in various ways, both given internally in capsules and also given in the form of a watery glycerine extract which was injected under the skin. The suprarenals used were those of the calf. Nothing of note happened during the treatment and it was reasonable to suppose that the giving of the suprarenal extract had contributed very largely to the cure of the patient. M. Becliere compared the treatment of patients suffering from Addison's disease by suprarenal extract with that of patients suffering from myxœdema by thyroid extract and came to the following conclusions. In myxœdema the beneficial action of the thyroid extract is obvious after only a few days' treatment; in Addison's disease, on the other hand, at least two months elapse between the commencement of treatment and the appearance of beneficial results. In myxœdema the benefits are only temporary—i.e., the patient must continue the treatment throughout the remainder of his life. In Addison's disease the benefits of the treatment last for some five months after the administration of the extract has been left off and in the case he was citing the improvement must not only have continued but have really increased, for the patient had remained well for three years. The fundamental differences between the mode of action of suprarenal extract and thyroid extract were as follows. Thyroid treatment acted by supplying the organism with substances which the myxœdematous person could not manufacture for himself, while in the case of suprarenal extract the most reasonable hypothesis seemed to be that it brought about a compensatory hypertrophy of those portions of the suprarenal capsules which remained healthy and this hypothesis agreed with the results obtained by hypodermic injections of suprarenal extract in animals. M. Gaillard said that he had tried this treatment in an analogous case and had obtained no result whatever. M. Widal had tried it in a patient who was a typical case of Addison's disease, and who had a tuberculous family history; he could tolerate from ten to twelve grammes daily of suprarenal capsules from the sheep. No alteration occurred in the amount of pigmentation. The patient left off treatment highly delighted with the increase in his strength, but returned at the end of some weeks just as weak as before and with gastro-intestinal troubles in addition. He died shortly afterwards. M. Widal, however, believed that the treatment was worth trying provided that it was begun quite early in the disease. M. Hayem had treated a patient in 1894 with doses of from ten to fifteen grammes of calf's suprarenal capsules per diem. As in M. Widal's case the weakness was much relieved after some two or three months' treatment, but no difference was noted in the pigmentation. The improvement lasted for ten months, but finally gave way and the patient died in 1896.

Professor Grimaux and the Zola Trial.

M. Grimaux, formerly Professor of the Faculty of Medicine and still a member of the Academy of Sciences and Professor at the Ecole Polytechnique, was subpœnaed as a witness on M. Zola's side in the recent trial. He attended at the court and gave it as his opinion that the famous writer had done quite right in publishing his notorious letter of accusation against the Etat Major. He added that both M. Zola and Captain Dreyfus were completely unknown to him. These remarks were the cause of great excitement among various officers, many of whom had been pupils at the Polytechnic and consequently of Professor Grimaux. So that evening, in the corridors of the Palais de Justice, when Professor Grimaux offered his hand to these gentlemen, they refused to take it and turned their backs on him. In consequence of these incidents the Minister of War, in whose hands are the direction of the Polytechnic School and the nominations of the professors, considering that the position of Professor Grimaux would be intolerable with regard to his pupils, suspended him from office. On March 5th at the meeting of the Society of Biology, as soon as Professor Grimaux made his appearance Professor Charles Richet rose and made a little speech. He reminded the members that it was the custom in that society to congratulate any member who had recently attained any distinction or decoration or had been nominated to any important post. He therefore thought they ought to congratulate Professor Grimaux on account of his suspension, for it was an honour to him as a sign of the independence and dignity of his character. Professor Grimaux, who was much affected, expressed his thanks and the society voted that its congratulations should be entered on the minutes, all the members present except five agreeing to this.

Acquittal of Dr. Laporte.

The Court of Appeal has acquitted Dr. Laporte, who it will be remembered was condemned by the Court of First Instance for having caused the death of a patient in whom he had performed craniotomy. The Advocate-General has in addition withdrawn all accusations against him.

The Treatment of Eczema and Psoriasis by Scarification.

At the meeting of the Therapeutical Society held on Feb. 23rd M. L. Jacquet said that he had only found the scarification treatment of psoriasis applicable to isolated patches. It was useful above all in psoriasis which occurred upon portions of the body generally uncovered, such as the hands and face, and also in women for patches occurring on the chest and the upper part of the back. M. Jacquet has treated in this fashion two patients and both were speedily relieved without any scar following. The scarification was done in several sittings after careful removal of the surface of the patches. This was repeated twice a week for two months in the one case and for a slightly less time in the second. This method is only applicable, says M. Jacquet, to patches of limited size and especially to those which are objectionable by reason of their situation. Perhaps, however, the success which he had obtained in these two cases was due to the fact that the disease had been for a long time *in statu quo* and was not, as in some others in which he had tried it, still spreading. The advantages of this method are also apparent in cases of eczema. M. Jacquet has treated cases of eczema of all kinds. His figures can be distributed as follows: (1) three cases of lichenoid eczema on the backs of the feet, the hands, and the forearm; (2) a very chronic eczema in the pre-auricular region on both sides; (3) two cases of chronic eczema of the fingers; (4) three cases of eczema of the face in adults; and (5) four cases of eczema of the face in children. M. Jacquet's method of treatment was as follows. First of all a poultice made from potato starch is applied; it must be cold and often renewed. No antiseptics are used and the poultice is only taken off during the time of the operation itself. Secondly, the places are scarified with a sharp instrument in parallel lines, the superficial layer of the skin being divided to a depth of three millimetres. No cross cuts are made. Thirdly, the patches are dressed with wet compresses and on returning home the patient applies again the starch poultice, which must be kept on until the next sitting—that is to say, in the majority of cases for three or four days—in the course of which time every vestige of the scarification will have disappeared. If carried out in this manner the scarification is very slightly painful and is borne well. According to M. Jacquet from six to thirteen sittings are sufficient to bring about a cure.

March 8th.

FROME HOME FOR TRAINED NURSES.—The annual meeting of this institution was held on Jan. 28th. The treasurer's report showed receipts amounting to £484 and expenses amounting to £490, leaving an adverse balance of £6.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Enteric Fever Bacilli in Buttermilk.

ENTERIC fever bacilli have been found in fresh milk by several observers, but they usually perished when acid fermentation developed. The prevalence of enteric fever among the children of a board school in Hamburg where buttermilk was largely used induced Dr. Fränkel and Dr. Kister to inquire whether the source of the infection might be traced to this milk. According to a communication published by them in the *Münchener Medicinische Wochenschrift* they first ascertained what kinds of bacteria were able to live in buttermilk notwithstanding its strongly acid reaction; and in every instance they found certain saprophytes. Cultures of enteric fever bacilli were then added to sterilised buttermilk and kept at different temperatures—viz., on ice, at 22° C. (61·6° F.), and at 37° C. (98·6 F.). Some of the bacilli on the ice and also those kept at 37° C. remained alive till the third day, while some of those kept at 22° C. remained alive till the ninth day. The amount of acid present in freshly-made buttermilk was therefore not sufficient to destroy the bacilli in a short space of time. The experiments made with sterilised buttermilk proved that the bacilli of enteric fever developed together with the saprophytes, but the germs decreased rapidly in number after a certain time. At 22° C. there was a decrease of one-third after three hours and after twenty-four hours the bacilli had perished in about 50 per cent. of the cases. At 37° C. the bacilli lived a much shorter time, the consequence being that after eight hours examination gave a negative result in about 40 per cent. of the cases. These experiments accordingly prove that the infection of enteric fever may be conveyed by buttermilk.

The Disinfection of the Skin.

In the *Centralblatt für Chirurgie* Dr. Landerer and Dr. Krämer, surgeons to the Karl Olga Hospital in Stuttgart, describe a new method of disinfecting the skin previously to operations. They point out that the methods hitherto used are insufficient from a bacteriological point of view, as an investigation undertaken by Dr. Lauenstein, of Hamburg, showed that the skin was sterile in only 49 out of 124 cases examined. The bacteria are kept on the skin by its sebaceous secretion and are present not only on the external surface but also in the interior of the sebaceous glands. The usual cleansing with soap and ether may dissolve the superficial sebaceous substance on the skin but does not attack the bacteria in the subjacent strata. For this purpose gaseous disinfecting agents are necessary, that used by Dr. Landerer and Dr. Krämer being a 1 per cent. solution of formalin. After the usual application of soap and water a bandage moistened with this solution is put on the skin and covered with thin indiarubber. After six hours the bactericidal action is obvious and in from twelve to thirty-six hours absolute sterility is secured. When the bandage is kept on for more than two days the skin becomes indurated and the primary union of the divided tissues seems to be interfered with. In sixty patients treated in this way the wounds healed by primary union in all except three cases of hernia. Bacteriological examination proved that the skin was sterile in about 90 per cent. of the cases.

The Bathing of New-born Children.

In a paper read before the Hufeland Society of Berlin Dr. Neumann uttered a warning against bathing infants during the first few days after their birth, as he is of opinion that the cicatrisation of the umbilicus is hindered by bathing and that infection may arise from the germs present in the water. His views are strongly opposed by Dr. Schrader, assistant physician to the University Lying-in Hospital of Halle, who has written to the *Berliner Klinische Wochenschrift* stating that he has examined a series of 150 newly born children of whom one-half were bathed in the usual way whilst the other half were only washed. The stump of the umbilical cord was dressed with salicyl powder and cotton wool; in the case of the infants who were bathed this dressing was changed after each bath, but in the case of the infants who were not bathed the dressing was allowed to remain for several days. The temperature of the children was taken twice a day, the result being that of the 150 children 22 (14·7 per cent.) had a rise of temperature. In 12 cases the temperature rose only once above 38° C. (100·4° F.); 8 of the 22 had been bathed and 14 had only been washed. There was only one instance in which an infection of the umbilical wound appeared to be the cause of the fever and this case occurred in an infant who had not been bathed. In nine instances the umbilical stump was fœtid, but once only in a bathed child. It fell off on an average on the fifth day in the infants who had been bathed, but somewhat later in those who had not. As for the influence of bathing on the weight of the infant Dr. Schrader states that on the tenth day after birth the average increase of weight shown by 63 of these infants was 140 grammes for 32 who had been bathed and 132 grammes for 31 who had not been bathed. At the same time it was found that 19 of these infants had the same weight as at birth; 9 of them had been bathed and 10 had been washed. It was therefore obvious that bathing had no prejudicial influence on metabolism, neither was any harm done by it to the eyes, as alleged by Dr. Neumann. One case of slight catarrh of the conjunctiva occurred in each of the two divisions—those who had been bathed and those who had not been bathed.

Behring's Tetanus-antitoxin in Veterinary Practice.

Dr. Arndt, Government veterinary surgeon in Oppeln, has collected the cases of tetanus in horses which have up to the present been treated by Behring's antitoxin, and has published the results in the *Deutsche Medicinische Wochenschrift*. The first series contains 28 (*sic*) cases in private practice, of which 6 were injected on the first, 8 on the second, 3 on the third, 3 on the fourth, 2 on the sixth, and 1 respectively on the fifth, seventh, eighth, and ninth day of the illness. Of the horses treated on the first day 5 recovered and only 1 died; of those treated on the second day 3 recovered and 5 died. On the other hand, the cases treated on the sixth, seventh, and eighth days all recovered. Some observers considered that a temporary improvement was produced by the antitoxin even in fatal cases, whilst others believed that an originally slight attack was made worse by the injections. A diuretic action observed by Professor Dickerhoff of Berlin is denied by Dr. Casper of Frankfurt. The second series contains 28 cases treated in the Royal Veterinary Hospital in Berlin, 15 of which recovered and 13 died; of the latter 5 were in a hopeless state when brought to the hospital. The results of the injections are much better than those obtained without treatment, the ordinary death-rate being about 85 per cent. Recovery occurred from the ninth to the seventeenth day. Intravenous injections or double doses did not produce a quicker recovery. It was observed that the antitoxin produced by the Hoechster Farbwerke differed very much in strength. In a third series of 19 horses treated by an antitoxin of less strength there were 16 deaths. Dr. Arndt's statistics show that of 75 horses treated 33 recovered and 42 died. In cases complicated with pneumonia, pulmonary œdema, and cardiac debility the remedy proved useless.

March 8th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Typhoid Fever in Milan.

PROFESSOR BORDONI-UFFREDUZZI, medical consultant-in-chief to the city of Milan, has just delivered before its Royal Society of Hygiene an interesting lecture on the typhoid epidemic which raged last year in the Lombard capital and its environs. One point which he put in evidence will, I think, be borne out by the experience of other continental capitals—to wit, that within the last thirty years the fever, though not appreciably less frequent, is at the same time less grave in its symptoms, insomuch that many cases of undoubted typhoid fever are so mild and run so easy a course that they are not reported to the health authorities at all. In 1894 Milan had 468 cases of the disease and 269 deaths, while in 1897 she had 1525 cases and only 242 deaths. What raised the mortality in Milan last year was not the number of deaths occurring in the centre of the city but those occurring at the gates or in the environs, these outlying points receiving a large contingent of cases brought in from the neighbouring communes and having little or no connexion with Milan. Drainage and water-supply, though better than they were a decade ago, are, by the admission of Dr. Bordoni-Uffreduzzi, still far from being worthy of such an important centre as

the Lombard capital—out of 904 dwelling-houses visited by typhoid fever only 83 were properly provided with drains and only 235 were in possession of "acqua potabile" (pure drinking-water). One theory as to the origin of last year's epidemic of typhoid fever Dr. Bordoni-Uffreduzzi had no difficulty in putting out of court—the excavations and disturbances of inert soil of which the city was the scene. The workmen employed in these, so far from being exceptionally stricken with typhoid fever, did not even contract malaria, the malady of which such operations are usually supposed to be productive.

The New "Istituto Antirabico" at Florence.

Milan, Rome, Naples, among Italian cities, are all provided with institutes in which the Pasteur treatment of rabies—its prophylaxis and its cure—is efficiently practised. That at Milan, indeed, as has been regularly shown by the reviews of its annual reports published in THE LANCET, falls little short of the parent institute in the success of its operations. Now—not a day too soon—Florence, for herself and for the Tuscan province, will shortly be equipped with an "Istituto" on similar lines and will thus complete the clinical resources of a school which has recently performed work so effective, particularly in the prophylaxis of the "pestis bubonica." Snake-bite, a lesion of exceptionally common occurrence in a population so prevailingly agricultural as that of Tuscany—a lesion, moreover, which, as THE LANCET pointed out in the exceptionally hot summer of 1896, can even in temperate latitudes prove rapidly fatal—will also find provision made for its expeditious and effective treatment in the new "Istituto," one of whose most active promoters, I may add, is the professor of clinical medicine, Dr. P. Grocco.

Public Security on the Riviera Lines.

The promptitude, energy, and success with which the authorities of the Alpes Maritimes ran to earth and committed for trial the miscreant who assaulted and robbed a lady in a railway carriage and afterwards threw her on the line in hopes that she would be killed outright by the next train may be taken as proof of the importance they attach to the safety of the travelling public in that favourite resort of the valetudinarian. Nothing could be more fatal to the prosperity of the Riviera Ponente than that such a daring and all but successful outrage should have been practised with impunity. Let us trust that the example of the French authorities will not be thrown away upon their Italian neighbours whose lines have yet to clear themselves of the notoriety incurred not only by frequent, if no longer systematic, luggage robberies, but also by deeds of violence not yet brought home to their authors. Within a twelvemonth of each other the route between Milan, Bologna, and Florence, much frequented at all times and particularly in summer for its balneary resorts of Salsamaggiore and Porretta, was the scene of two audacious acts of brigandage the victims of which are still without reparation or redress. Both acts were so like each other in plan and in detail that only one of them—the second—need be described as affording evidence of a supineness on the part of the authorities impudently utilised by the malefactors. Between Bologna and Porretta, *en route* to Florence, a first-class compartment was occupied by two travellers—one an Italian barrister, in lucrative practice, and another, an *employé* at the Carrara marble quarries at which he was paymaster. It was night, about 10 P.M., and the train was threading one of the forty and odd tunnels on the line when the door of the compartment suddenly opened and a man appeared with a loaded revolver, which he presented at the two passengers alternately. "I am poor," he said; "I want money desperately. Give me all you have instantly or I will fire." Taken thus aback and half asleep, as it turned out, first the one and then the other passenger gave up his purse or pocket-book with his watch and chain, and the robber, backing to the door and keeping the revolver still pointed at them disappeared in the darkness, carrying with him (*inter alia*) several thousand francs in notes to be shared with the accomplices whose collusion or coöperation (it is affirmed by the police) rendered his exploit practicable. Italians are possibly differently constituted from Englishmen who in similar circumstances (and two to one!) would have shown fight before being plundered so impudently. But, be that as it may, the moral of the incident lies in the fact that, instead of two able-bodied men, the inmates of the compartment might have been ladies or invalids, on whom the shock of the outrage might have proved very serious if not actually fatal. I have said that the robbery described was almost an exact replica of another perpetrated about the same time and place a twelvemonth before and that in both cases the authors are still at large. The fact is significant of the leeway yet to be made up in Italy for "pubblica sicurezza," the control of which has lately undergone one of its many periodical but inefficient overhaulings. Here (as in so much else Italian) want of funds lies at the bottom of the evils complained of, the service being underpaid and the police offices, central and provincial, so short of money that they cannot afford to telegraph such detailed descriptions of a fugitive criminal as would lead to his discovery and arrest.

The Borelli "Istituto Iatromeccanico."

Among the anatomists and physiologists who followed in the wake of William Harvey few were so prolific in ideas and so painstaking in induction as Alfonso Borelli, of Naples (1608-1679), "der geniale Professor in Messina und Pisa" whom Haeser in his "History of Medicine" eulogises as author of "des bahnbrechenden Werkes" *De Motu Animalium* published at Rome in 1680 and often reprinted elsewhere. Conformably to laudable custom his name has been utilised for an institute on the lines he laid down in that and other cognate treatises for the practice of "muscular therapeutics" and for the prosecution of physical education on a really scientific footing. The Institute, opened the other evening in presence of a large representation of the profession, Borelli's own Naples deputing Professor Corrado, is equipped with the most recent and effective apparatus for the evolution of the muscular powers as well as for improving the respiratory processes and developing "tone" in the neurasthenic. Orthopædics are also well provided for and the "Istituto," directed by Dr. Alessandro Mari and supported by leading consultants in medicine and surgery, is expected to form the kernel of a school in which "physical education" of a healthy and thorough character can be established for imitation in other Italian centres. The movement is a gratifying one and eminently reassuring for "Young Italy," of whose future it has become the fashion to take rather desponding views. The present Government is interesting itself actively in the same direction and the "Consiglio Superiore dell' Istruzione" at a recent sitting took steps for raising the "livello intellettuale degli insegnanti di Ginnasio" (the intellectual level of gymnasium teachers), mainly on the anatomico-physiological lines in which Borelli was a pioneer. The truth is, Italy is undergoing that best of "awakenings" at present, in which her men of science, particularly those of her medical schools, in parliament and in public, are creating an enthusiasm for more masculine ideals, physically and mentally, than those hitherto in favour with the "civiltà Latina."

The Bacillus Icteroides and Serotherapy in Yellow Fever.

THE LANCET has given a detailed account of Professor Sanarelli's discovery of this bacillus[1] and in subsequent issues has referred to the progress made by the same investigator in the serum treatment of yellow fever. From Montevideo (in whose university Professor Sanarelli holds the chair of Hygiene and whose Hygienic Institute he still directs) comes the announcement that at San Paulo that treatment is being practised on a considerable scale and "ottiene gran successo." An official report of the results, published under the eye of Professor Sanarelli himself, is awaited with interest.

March 5th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The Budapest Pasteur Institute in 1897.

THIS institute had treated 1685 persons in the last year who had been bitten by animals suspected of suffering from rabies. In 58 cases it was found that the biting animals had been healthy ones. Therefore 1627 persons could be considered as bitten by really hydrophobic or suspicious animals. Of these 15 persons died from hydrophobia—i.e., 0·91 per cent. It must be pointed out that 9 of these 15 persons had presented themselves too late for inoculation and therefore the real death-rate of the inoculated must

[1] THE LANCET, July 3rd, 1897, pp. 60-61

be reduced to 6 cases, which make 0·37 per cent. of the total. This must be considered a splendid advance if compared with the days when antirabic inoculations were unknown and the death-rate from hydrophobia amounted in Hungary in those times to 13·28 per cent. The Budapest Pasteur Institute came into existence on April 15th, 1890. The whole number of persons treated with antirabic injections since 1890 amounts to 8199. Of these 131 died from hydrophobia—i.e., 1·6 per cent. From this number 73 persons who presented themselves too late must be knocked off, and thus we get among 8126 persons treated in time a mortality of less than 1 per cent. Among the persons treated during the last year in the Budapest Pasteur Institute there were 3 who had come from Germany, 59 from Servia, 5 from Montenegro, and 1 from Bulgaria.

"The Beginnings of Mental Life."

This was the title of a brilliant address delivered by Professor Donath at the annual meeting of the Budapest Hospital Association. He started with an interesting description of the faculties of some of the lower forms of animal life and concluded that mental life is an evoluted form of cell activity. He then criticised the address of Dr. Backe at the last annual meeting of the British Medical Association at Montreal, in which it was stated that mental disorders are to be attributed to atavism. Professor Donath is of opinion that the principal cause of the spread of mental disorders in the present day is first to be sought in the very hard struggle for life and secondly, but in no lesser degree, to the spread of syphilis and alcoholism. It is very interesting to note that he tried to prove that mental faculties taken grossly are the same in the savage as in the civilised man and that it is principally the absence of mental exercise and the different mode of living which explain the lower mental standard of the former.

Death of Professor Schwimmer.

Professor Ernest Schwimmer, who held the chair of Dermatology at the Budapest University, succumbed on Feb. 25th to an attack of cerebral apoplexy. The deceased was born in 1837 in Budapest. He studied medicine in Budapest and in Vienna and in the latter place became an assistant to the late Professor Hebra. After four years' service in the hospital he went to Egypt, where he studied some endemic forms of diseases of the skin. He contributed many original papers to the medical press and by his elaborated studies on leukoplakia made his name soon known in the scientific world. He was for twenty-five years an active member of the teaching staff of Budapest University, where his loss will be long felt.

Feb. 27th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Position of the Medical Profession in Victoria.

THE retiring President of the Medical Society of Victoria, Mr. J. T. Brett, took as the subject of his address the Position of the Profession in Victoria and its Relation to the General Public. He stated that statistics showed unmistakeably that the medical profession was increasing in numbers vastly out of proportion to the general population and he considered the outlook for the ever-increasing accessions to the profession a poor one—a bare subsistence and that hardly striven for. One reason for this view, apart from the overcrowding of the profession, was the continued encroachments of the friendly societies. Patients who ought to pay proper fees join these societies while the class for which they were intended crowd the hospitals. Mr. Brett insisted that medical men must combine and see to it that a wage limit is fixed by the friendly societies and he thought that those bodies would themselves recognise the justice of the demand if fairly put before them by a united profession. If not, then the profession would have to establish a public medical service itself. The public hospitals were also greatly abused, and he did not think the proposals of the Charities Bill, introduced last session, would improve matters, and the passing of such a measure would only foist on the profession further burdens and responsibilities and deprive it of much of its just due. Reference was then made to quackery, which has lately attained vast proportions in Victoria, and Mr. Brett thought it was the duty of the profession to inform the general public how they were being deceived and duped, although such action might be misinterpreted and ascribed to jealousy and unworthy motives. The recent appointment of a layman to the position of coroner was referred to and Mr. Brett approved of the action taken by the various medical societies to protest against the appointment. He would go further, however, and protest against the Coroners Act itself. He thought skilled pathologists should be appointed by the State to examine and report to the coroner upon the cause of any suspicious deaths, who would then decide whether an inquiry was necessary. The treatment of medical witnesses in courts of law also came in for adverse comment. According to Mr. Brett the medical practitioner is called as an expert and treated as a criminal and counsel have not hesitated to impute to him venality and untruthfulness. His rightful place in many cases would be not in the witness-box but on the bench as a medical assessor.

The Inspector-General of Asylums in New South Wales.

Dr. F. N. Manning, the Inspector-General for the Insane and Medical Adviser to the Government of New South Wales, is in bad health and will probably shortly retire. It has been decided by the medical profession in New South Wales to entertain Dr. Manning at dinner on Feb. 9th, when he will be presented with a testimonial. Dr. Manning was born at Rotherthorp, Northamptonshire, in 1839, and studied at St. George's Hospital. He took his M.R.C.S. Eng. in 1860 and became M.D. St. And. in 1862. He was a surgeon in the Royal Navy for some years and saw considerable service with the Naval Brigade in the Maori war in New Zealand. In 1867 he was appointed medical superintendent of the Gladesville Asylum and in 1879 Inspector-General of the Insane. It was on Dr. Manning's recommendation that the Asylum for Idiots at Newcastle was established, the first in Australia. No member of the profession in New South Wales is held in higher esteem than Dr. Manning.

The Adelaide Hospital.

Troubles still continue at the unfortunate Adelaide Hospital. The medical superintendent, has now been suspended from his position by the board of management.

The Sydney Hospital.

For the positions of six resident medical officers to the Sydney Hospital there were twelve candidates, three of whom were ladies. The proceedings of the Board of Directors were conducted with closed doors, but it is understood that considerable discussion took place as to the advisability of electing women as resident officers. The women were not elected. Dr. Walter Cecil M. Clelland was elected medical superintendent. Dr. Thomas H. Kirkland has been appointed honorary assistant aural surgeon.

The Melbourne Hospital.

Some time ago the medical staff of the Melbourne Hospital called attention to the insufficiency of the accommodation for out-patients. A sub-committee of the staff of the Hospital Committee met and inspected the out-patient department and plans were drawn up for better accommodation, but as usual nothing was done for want of funds. The matter was again before the committee recently and it was decided that the Finance Committee should bring up a report on the subject.

Appointment of Public Vaccinator at Port Melbourne.

The Port Melbourne Municipal Council is aggrieved because the Board of Health recommended a medical practitioner residing at South Melbourne for the position of public vaccinator in preference to medical practitioners residing in the municipality. The Council protested to the Board of Health and getting no satisfaction appealed to the Minister of Health, who referred the matter back to the board with a request for the reasons which led to the appointment of the South Melbourne practitioner. It has been customary to recommend the health officer for the post of vaccinator and the board replied that one reason for not recommending the health officer in this instance was that he had stated on a public platform that he was an opponent of vaccination.

The Intra-peritoneal Operation for Abdominal Hydatids.

In the *Australasian Medical Gazette* for January Dr. Fiaschi, of Sydney, records five cases of abdominal hydatids successfully treated by Russell's method and advocates its adoption, its advantages being rapid and painless recovery,

less danger of exhaustion and less danger of septic infection, and greater ease in treating cysts on the upper surface of the liver and spleen.

Jan. 25th.

Obituary.

JOHN ANDREW MALCOMSON, M.D. R.U.I.

ONE of the most simple, single-minded, and yet withal firmest and strongest of men has fallen in the very thick of the battle while fighting valiantly in the front rank, utterly regardless of self-preservation, in the person of Dr. Malcomson, who as medical officer of health of the borough of Middlesbrough performed his duties to the satisfaction and admiration of all for the last quarter of a century. The preent epidemic of small-pox added so enormously to his physical and mental labours that his death, ensuing as it did from cerebral hæmorrhage within one hour in a man forty-six years of age, previously healthy as far as was known, and of robust physique, suggests but one conclusion, that he sacrificed himself in his over-zeal for the welfare of the town he served, and those only who knew him well can judge to what degree he would, and did, exert every atom of his powers both of mind and body.

Dr. Malcomson was a member of an old Yeoman family in Ireland and graduated M.D. at Queen's (now the Royal) University, Dublin, at the early age of twenty-one years; after a brief time in Oxford as an assistant he went to Middlesbrough in a similar capacity to the late Mr. Dickinson. Before many months had elapsed he obtained the vacant house surgeoncy at the North Riding Infirmary and very shortly afterwards resigned it for the appointment of medical officer of the New Fever Hospital, a post which his former principal, Mr. Dickinson, had resigned. He had now got his foot on the first rung of the ladder largely by what is called "opportunity" and "good luck," but he made good use of that opportunity, and the corporation, speedily recognising the sort of man he was, gave him appointment after appointment as it became vacant, so that at the time of his death he was, without any special desire to be so, a veritable pluralist. He was medical officer of health, medical officer of the Fever Hospital, of the Tees Port Sanitary Authority, of the Eston District Council and the Middlesbrough District Council, honorary medical officer of the North Riding Infirmary, and conducted a private practice as large as the time at his disposal would permit him to give attention to. Dr. Malcomson was "real grit" and was soon discovered to be so by the wily Yorkshiremen; hence his success, which has been all too great. Many years ago he treated a large post-pharyngeal abscess following scarlet fever in the writer's child which threatened immediate suffocation, a result which would inevitably have ensued but for the prompt tracheotomy and suction of the blocked tube by the mouth of the operator, showing a promptitude and courage of action and devotion to duty which it is greatly to be feared ultimately led him into the seductive paths of excessive enthusiasm and its frequent sequel—premature collapse.

Dr. Malcomson, as may be inferred from the foregoing, was a strictly upright and honourable man and gained the goodwill of all classes and of his professional brethren in particular. There was never any misunderstanding between the medical officer of health and the private practitioners of Middlesbrough and district. A genial nature and presence, a large share of Irish wit, more than an average share of tact and common sense, and a genuine belief in the goodness of mankind as a whole kept him out of many a difficulty which others less gifted would have got into. The Masonic brethren will be interested to know that he was a Past Master of his lodge and that the Provincial Grand Lodge had conferred upon him high office—that of Senior Grand Warden. When the news of Dr. Malcomson's sudden death spread in the town the effect was electrical; a real shock was felt by all, followed by a feeling of deep sorrow and regret. Ten years ago he married the only daughter of the late Dr. Smith, of Derry, whom he leaves with three children to bear the burden of an irreparable loss, for his married life was in true accord with his professional one. Dr. Malcomson died on March 1st and on the 4th was interred at the new cemetery, Middlesbrough, with all the honours of a public funeral. The attendance was one of the largest and most representative that has ever taken place in the town and was most indicative of the position he had held in the hearts of the public and his profession.

Medical News.

SANITARY MATTERS AT TORQUAY.—The sanitary committee of Torquay, acting upon the advice of their medical officer of health (Mr. Karkeek), have decided to abolish the old sanitary certificate and to issue in its place a formal report of inspection recording that the drains and pipes have been tested by smoke and found in good working order. There is to be a footnote repudiating any legal responsibility. Mr. Karkeek was anxious to secure the use of the water test, but the gradients are stated to be too steep in Torquay for its application.

EUROPEAN GENERAL HOSPITAL, CALCUTTA.—A new block of buildings in connexion with the Calcutta General Hospital and in its immediate vicinity is just now in course of erection and the ceremony of laying the foundation-stone was performed by the Lieutenant-Governor on Jan. 29th in the presence of a large gathering. A full account of the proceedings is published in the *Englishman*, the first speaker being the Hon. Mr. Glass, who gave an outline of the history of the hospital and of the various recommendations which had been made with a view to remedying its defects. He mentioned that the building, of which the foundation-stone was about to be laid, is the first of the large blocks or wards which will eventually take the place of the unsuitable structures forming the Presidency General Hospital. The central block was purchased by Government as far back as the year 1768 from a native gentleman, who it is understood built it as a place in which to entertain his European friends. The two detached wings were built in 1795. At that time the central block was used as a civil hospital, the eastern block as a European military hospital, and the western block as a hospital for sepoys—an arrangement which remained in force till 1870, when the two military hospitals were transferred to other quarters and the institution was applied to its present purpose of a general hospital for Europeans. The designs of the new building were prepared by Mr. W. Banks-Gwyther, A.R.I.B.A., under secretary, Public Works Department. After the laying of the stone Sir Alexander Mackenzie addressed the assembly in a long speech describing the various financial and other difficulties which had presented themselves. The committee appointed to consider the question of improving the hospital had estimated the cost of carrying out its recommendations at twenty-two lakhs of rupees. The committee had received a very valuable communication from Brigade-Surgeon-Lieutenant-Colonel A. Crombie making various suggestions as regarded the plan and style of the building. One of these suggestions was that as in England and in Europe hospitals were being provided with pure warm air, so in Bengal they should provide cool filtered air for the wards. He (Sir Alexander Mackenzie) was of opinion that it might be desirable to cool the air during eight months of the year, but for four months Calcutta enjoyed as good a climate as any other place and it would not be desirable to cool the air in the cold weather. With a view to obtaining further information Mr. Banks-Gwyther, who was going to England on leave, was instructed to consult the authorities of the Birmingham Hospital, where the introduction of pure warm air has been decided upon. With regard to another suggestion relative to accommodation for paying patients Sir Alexander Mackenzie said that special accommodation for the wealthier classes could not be provided in a public hospital maintained at the expense of the ratepayers, but if the European community came forward as the committee suggested and assisted in building and equipping a comfortable ward for well-to-do patients the Government would meet them half-way. He recognised the propriety of treating indigent planters and poor Europeans of gentle nurture in a more liberal way than was possible at present and a communication had been received from the Planters' Association of Assam offering, in commemoration of Her Majesty's Jubilee, to provide a sum for the endowment of a ward for indigent Europeans of that class.

THE ROENTGEN SOCIETY.—A meeting of this society was held on March 1st at 11, Chandos-street, W., Professor Silvanus Thompson being in the chair. Mr. J. H. Gardiner read a paper on the Relation between the Photographic Action and Penetration of Roentgen Rays Generated at Different Vacua. Five stages of vacua were demonstrated. Curves were plotted, one of which gave a means of calculating the length of exposure and state of tube necessary to get a good radiogram of any given object. Mr. Wilson Noble followed with a paper on Various Makes of Tube and Varying Conditions of Vacua. He thought that, generally speaking, the higher the vacuum the better. By increasing the size of the electrodes resistance might be lessened, although it would not increase the amount of x rays. He had good results with double anodes and large tubes. Dr. Walsh showed a skiagram of Congenital Dislocation of the Hips by Mr. Noble Smith and Mr. Isenthal demonstrated a New Coil for M. Rochefort and M. Widys, of Paris.

SEAMEN'S HOSPITAL SOCIETY.—The annual meeting of the Seamen's Hospital was held on Feb. 25th at the Royal United Service Institution, the Bishop of London presiding. The statistics showed that during the year there were 2620 in-patients and 22,500 out-patients. The total income was £22,250 and the total expenditure £17,760. The Prince of Wales's Hospital Fund contributed £1413, including £918 for the branch hospital; the American citizens in London subscribed, through the American Victoria Jubilee Fund, £1000 for the endowment of a bed; and the Queen also sent her usual subscription of 100 guineas.

BRISTOL MEDICAL DRAMATIC CLUB.—The Bristol Medical Dramatic Club gave very successful performances of Mr. A. W. Pinero's comedy *The Magistrate* on the evenings of Feb. 15th, 16th, 17th, 18th, and 19th, at the All Saints' Hall, Clifton. The club practically commemorated its coming of age and for several years has given excellent dramatic entertainments in aid of the local medical charities.

LISKEARD COTTAGE HOSPITAL.—The second annual meeting of the subscribers to the Passmore Edwards Cottage Hospital, Liskeard, was held on Feb. 1st, under the presidency of the Mayor. The report showed that the total expenditure had been £304 and the receipts £506, leaving a balance of about £200 in hand. There were seventy-six admissions of patients during the year. The honorary secretary alluded with regret to the loss sustained by the death of Mr. A. Hingston, the honorary consulting surgeon.

DIPHTHERIA IN LONDON.—The amount of diphtheria in London during the four-weekly period ended on Feb. 26th was but little different from the amount chronicled during the first four weeks of the current registration year ended on Jan. 29th. In the January period the total of notified attacks was 901 and in the February period 939. The respective weekly averages were 225 and 235; and whilst in the earlier period there was invasion of all the sanitary areas of London there was one exception in the later period. Again, there were in January three districts having upwards of 50 notified attacks each and a total of 201, whilst in February there were four such districts with an aggregate of 299 attacks. Other six districts had only 23 cases in all. The registered deaths from diphtheria in the February period were 166 in number, or 41 weekly, as against 163 in the preceding period; and the case mortality fell from 18·1 per cent. in January to 17·7 per cent. in February. On the whole, therefore, the data for February compared very favourably with the opening weeks of the year, whilst they in turn had shown a satisfactory decline when compared with the concluding months of 1897. But though this can be said of London county the same by no means holds good in regard to the diphtheria mortality in the outer ring of the metropolis, the suburban districts, and especially certain of them, having given evidence of 'arge mortality. Thus in the four weeks of January the deaths in the several weeks were 15, 10, 7, and 15, making a total of 47; but in the succeeding four weeks, making the February period, the registered deaths in the outer ring were 15, 22, 18, and 23 respectively, yielding an aggregate of 78. The tendency to epidemic proportions has therefore been growing in the suburbs, a district which has less than one-third of the "Greater London" population and two-thirds of the total diphtheria mortality in the February period.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Old Age Pensions.

SIR WALTER FOSTER has introduced into the House of Commons a Bill to provide pensions for poor persons over the age of sixty-five years.

The Treatment of Habitual Inebriates.

In the House of Commons on Tuesday, March 8th, a resolution was passed declaring that it is desirable that the Government should introduce legislation dealing with the subject of the treatment of habitual inebriates. During the debate on the resolution the Home Secretary repeated his promise to undertake legislation in the course of the present session.

The Laws as to Dogs.

The Government have introduced into the House of Commons a Bill to consolidate and amend the laws relating to dogs. Mr. Walter Long, in his introductory statement about the Bill, said it was practically the same as that put before Parliament in 1894 with a few slight alterations based on the report of the Departmental Committee. It did not confer any new powers on the central authority nor did it supplant the muzzling regulations, but it gave to local authorities various powers, including powers to make by-laws as to stray dogs.

HOUSE OF LORDS.

FRIDAY, MARCH 4TH.

London University Commission Bill.

THE Duke of Devonshire moved the second reading of the London University Commission Bill and in doing so explained that the Bill was practically the same as the one introduced last session. The only alterations were alterations made with a view to removing any possible ground of opposition to the Bill and they were in the direction of restricting the power of any future Senate to alter the statutes or regulations made by the Statutory Commission in accordance with the provisions in the schedule of the Bill. As to any opposition there might still be to the Bill his Grace said he was inclined to believe that it proceeded from a certain number of gentlemen who had taken their degrees at London University at more or less remote periods and who entertained some vague and as he thought utterly groundless suspicion that any change in the constitution of the University would in some way tend to disparage the value of the distinction which they obtained formerly and of which they were still justly proud.—After a very short debate the Bill was read a second time.

HOUSE OF COMMONS.

THURSDAY, MARCH 3RD.

Vaccination Prosecution.

Mr. Thomas Bayley asked the Home Secretary whether his attention had been called to the case of the following men—namely, Mark Smith, Adam Birdger, Wilson Porter, Thomas Sandells, Arthur Savage Turmed Cooke, and William Menlin—who had been convicted and sent to Worcester Gaol as criminals for objecting to have their children vaccinated, and whether, seeing such conviction was contrary to the unanimous recommendations of the Royal Commission on Vaccination, he would give effect to these recommendations by ordering their release?—Sir M. White Ridley said that this question was the first notice he had received of the case and he was not prepared to relieve these men from the consequences of their disobedience of the law on the grounds suggested in the question.

FRIDAY, MARCH 4TH.

Disposal and Treatment of Sewage.

Mr. Chaplin, in reply to Lord Balcarres, said that the question of the appointment of a Royal Commission on the disposal and treatment of sewage was under consideration by the Government, but he was not at present in a position to make any statement as to the membership or terms of reference.

Army Medical Department.

Mr. Powell Williams, Financial Secretary to the War Office, replying to Dr. Farquharson, assured him and the House at large that the statement with regard to the changes proposed in the Army Medical Department will be made at the earliest possible moment—on the vote if that is the first opportunity.

Glycerinated Calf Lymph.

Dr. Farquharson asked the Lord Advocate whether the proposal to supply glycerinated calf vaccine lymph under certain conditions in England would be extended to Scotland.—The Lord Advocate replied: I am not aware what are the proposals referred to as having been made in England, but I understand that the Local Government Board are now considering arrangements for supplying glycerinated calf lymph in England, and the question as to the provision of a supply to Scotland will be duly considered in connexion with these arrangements.

Lead Poisoning in the Potteries.

This subject was again discussed on a vote on account for the Civil Service and Revenue Departments. Sir Charles Dilke, Mr. Tennant, Mr. Woodall, Mr. Allen, and other members made speeches calling attention to the wide prevalence of sickness and disease among the workers—especially among the girls and young women. The Home Secretary again explained the steps he has taken to have the matter inquired into and gave the assurance that if he found occasion for the services of a special committee he would not hesitate to appoint one. Mr. Asquith afterwards addressed the House. He spoke of the difficulty he had experienced when Home Secretary in dealing with this subject and confessed that the special rules then devised had proved inadequate for the purpose. He suggested that inventors should apply themselves to making a

form of respirator which would protect the wearer against the inhalation of noxious gases and at the same time be comfortable in use; but while he did so he pointed out that even such a respirator would not meet the whole difficulty, and he further suggested that before people were engaged for this dangerous employment they should be examined by a medical man acquainted with its peculiar conditions and when engaged should be examined periodically thereafter. Experience, he said, showed great difference in the degree of susceptibility to the diseases associated with this trade.

MONDAY, MARCH 7TH.

International Maritime Sanitary Board.

Mr. George Curzon, Under Secretary for Foreign Affairs, stated, in reply to Mr. Henniker Heaton, that the International Maritime Sanitary Board in Egypt had 75 employés, of whom 18 were Italians, 17 British, 7 French, 4 Greeks, 4 Austrians, 1 Swiss, 1 Belgian, and 23 natives. An English veterinary surgeon had recently been appointed.

Scientific Teaching in India.

Mr. Schwann asked the Secretary of State for India whether he could say what was the result of the recommendation which he was understood to have made in the summer of 1897 to the Government of India in support of the establishment of a physical laboratory in that country for advanced scientific teaching and research, and, if so, what sum was to be allocated to that object and when would the work be commenced.—Lord George Hamilton replied: The Government of India reported in a despatch received last week that the initial outlay on a physical laboratory of the kind described would be Rx60,000, and that they regretted in the present state of the finances to be unable to entertain so costly a scheme.

Pharmacy Acts Amendment Bill.

This Bill was read a second time without debate.

TUESDAY, MARCH 8TH.

The Sale of Poison.

Mr. Woods asked the Home Secretary if he was aware that carbolic acid was allowed to be sold in mineral water and other bottles without being labelled as poison and that the Pharmaceutical Society had recommended on three occasions—February, 1882, February, 1886, and October, 1888—to the Privy Council that carbolic acid should be scheduled as a poison, and whether the Government would at an early date give effect to the promise of the Privy Council in this matter.—Sir M. White Ridley replied: I understand that the Privy Council, while not thinking it expedient to include carbolic acid in the schedule to the Pharmacy Act, are of opinion that regulations should be made with regard to its sale and the sale of other poisonous substances and in accordance with the promise given have prepared a Bill for the purpose which will shortly be introduced.

Poisoned Vinegar.

Major Rasch asked the Financial Secretary to the War Office whether the vinegar stated to have held arsenic, supplied to the troops at Hilsea, was a portion of the vinegar obtained by contract for the Government; and, if so, who were the contractors.—Mr. Powell Williams replied: As the supply of undoubtedly poisoned vinegar is still the subject of investigation by a court of inquiry I will reserve any statement upon it beyond saying that the cask affected was one of six purchased by the regimental canteen from the same firm and that the other five were innocuous. I am glad to be able to say that all the persons affected have completely recovered.

Measles and Mumps on the Britannia.

Mr. Goschen in reply to Dr. Farquharson, said that an epidemic of measles and mumps had broken out in the *Britannia* training ship. Proper and efficient provision had been made for nursing the sick by fully-trained attendants. The present and previous outbreaks of epidemic disease had been traced to infection brought by cadets to the ship and were not attributable to any insanitary condition.

Appointments.

Successful Applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ADAMS, EDWARD W., M.B. Lond., has been appointed House Physician to the Sheffield Royal Hospital.

ARNISON, T. W., M.B., Ch.B. Vict., has been appointed Senior House Surgeon to the Salford Royal Hospital, vice J. P. Hall, resigned.

BARLING, H. G., M.B., B.S., F.R.C.S. Lond., has been appointed a Consulting Surgeon to the Birmingham General Dispensary.

BASDEN, H. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Stanford-le-Hope Sanitary District of the Orsett Union.

BASTIAN, H. C., M.D. Lond., F.R.C.P., has been appointed Consulting Physician to the University College Hospital, London.

BRYANT, J. H., M.D., M.R.C.P., has been appointed Assistant Physician to Guy's Hospital, London.

CHATTERTON, H., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Superintendent for the Infirmary of the Parish of St. Pancras, London.

COURTNEY, GUY B., M.A., M.D., B.C., D.P.H. Camb., L.R.C.P., M.R.C.S., has been appointed Honorary Surgeon to the Ramsgate and St. Lawrence Royal Dispensary, vice R. T. Bowden, resigned.

CROOKSHANK, F. G., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Second Assistant Medical Officer for the Berry Wood Asylum.

DENNIS, E., L.R.C.P. Edin., M.R.C.S., has been re-appointed Medical Officer of Health by the Stow-on-the-Wold Urban District Council.

FARNFIELD, W. W., M.R.C.S., L.R.C.P., has been re-appointed Resident Medical Officer for St. Mary's Children's Hospital, Plaistow, E.

FOX, EDWARD J., B.Sc. Lond., M.R.C.S., L.R.C.P., has been appointed Junior House Surgeon to the Salford Royal Hospital, vice T. W. Arnison.

FREW, J. F., M.B., C.M. Glasg., has been appointed Medical Officer for the Sixth Sanitary District of the Oldham Union.

GODLIFFE, J. H., M.D. Aberd., has been appointed First Assistant Medical Officer for the Berry Wood Asylum.

GÜNTHER, T., M.D. Tübingen, L.R.C.P. Lond., has been re-appointed Medical Officer of Health by the Hampton Wick Urban District Council.

HATFIELD, J. R., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health by the Chirbury Rural District Council.

HIGGINSON, C. G., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Resident Medical Officer for the Workhouse of the Chorlton Union.

HOMAN, W. T. L. M., L.Ch. Dubl., has been appointed Medical Officer for the Fourth Sanitary District of the Uxbridge Union.

HORNER, W. E. L., M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed House Physician to the North Staffordshire Infirmary.

IREDALE, J., L.R.C.P., L.R.C.S. Edin., &c., has been appointed Admiralty Surgeon and Agent for the Mablethorpe District.

JELLETT, J. W. H., M.D. Dubl., B.Ch., has been appointed Medical Officer of Health by the Heavitree Urban District Council.

LAVER, A. H., M.D. Durh., M.R.C.S., has been re-appointed an Honorary Medical Officer to the Jessop Hospital for Women.

MACKINTOSH, A., M.D. Glasg., L.F.P.S. Glasg., has been re-appointed Medical Officer of Health by the Clay Cross Urban District Council.

MORRIS, SYLVANUS GLANVILLE, M.D., M.S. Edin., has been appointed Medical Officer and Public Vaccinator for the Western District of the Llandilofawr Union.

MOUILLOT, F. A. de T., M.D., B.Ch. Dubl., has been re-appointed an Honorary Physician to the Yorkshire Home for Incurables.

MUIR, D. C., M.D. Glasg., D.P.H. Camb., has been appointed Medical Officer for the Abertillery Sanitary District of the Bedwellty Union.

PRATT, J. W., L.R.C.P. Edin., M.R.C.S., has been re-appointed Medical Officer of Health by the Wiveliscombe Urban District Council.

PRONGER, C. E., F.R.C.S., L.R.C.P. Lond., has been re-appointed an Honorary Ophthalmic Surgeon to the Yorkshire Home for Incurables.

RICKARDS, EDWIN, M.B. Oxon., F.R.C.P. Lond., F.R.C.S., has been appointed a Consulting Physician to the Birmingham General Dispensary.

RUSSELL, J. S. R., M.D. Edin., F.R.C.P. Lond., has been appointed an Assistant Physician to the University College Hospital, London.

SCHAUB, J. M., L.R.C.P. Lond., M.R.C.S., has been appointed Second Assistant Medical Officer for the Infirmary of the Parish of St. Leonard, Shoreditch.

SHEPHEARD, J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the North Walsham Urban District Council.

SIDEBOTTOM, T., M.B., C.M. Edin., has been appointed Medical Officer for the Sixth Sanitary District of the Lincoln Union.

SMITH, A. H., M.B., C.M. Edin., has been appointed Medical Officer for the Yarm Sanitary District of the Stokesley Union.

SOLLY, E., M.B. Lond., F.R.C.S., L.R.C.P., D.P.H., has been re-appointed an Honorary Physician to the Yorkshire Home for Incurables.

STANLEY, A., M.D. Lond., B.S., L.R.C.P., M.R.C.S., D.P.H., has been appointed Medical Officer of Health to the Municipality of Shanghai, China.

TURNER, WILLIAM, M.B., B.S. Lond., has been appointed Surgeon to the Royal Hospital for Diseases of the Chest, City-road, London, E.C., vice A. Pearce Gould, resigned.

TUXFORD, A., M.D. Edin., has been re-appointed Medical Officer of Health by the Boston Rural District Council.

VINES, SIDNEY K., L.S.A., has been appointed Junior House Surgeon to St. Mary's Children's Hospital, Plaistow, E.

WALTER, R. C., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Cholsey Sanitary District of the Wallingford Union.

WILLIAMS, ROBERT, M.B., C.M. Edin., has been re-appointed Medical Officer of Health by the Leominster Urban District Council.

WOOD, R. E., L.D.S. Eng., has been re-appointed an Honorary Dental Surgeon to the Yorkshire Home for Incurables.

WRANGHAM, W., M.B. Lond., M.R.C.S., L.R.C.P., has been appointed House Physician to Leicester Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASTON UNION.—Resident Assistant Medical Officer at the Workhouse, Erdington, near Birmingham. Salary £100 per annum, with furnished apartments, rations, washing, &c.—Applications to the Clerk to the Guardians, Union Office, Vauxhall-road, Birmingham.

BIRKENHEAD UNION.—Assistant Medical Officer for the Infirmary, Workhouse and Schools. Salary £80 per annum, with board, washing, and apartments, but no extra fees. Applications to the Clerk to the Guardians, 45, Hamilton-square, Birkenhead.

BOROUGH HOSPITAL, Birkenhead.—Junior House Surgeon. Salary £60 per annum, with board and lodging, but no wine, spirits, or beer.

BETHLEM HOSPITAL.—Two resident Clinical Assistants for six months. Apartments, complete board, and washing provided. Applications to the Treasurer, Bridewell Hospital, New Bridge-street, London, E.C.

BRECON INFIRMARY.—Resident House Surgeon, unmarried, who will also undertake Dispensing. Salary £70 per annum, with furnished apartments, board, attendance, fire, and gas. Three months' notice.

CITY OF LONDON ASYLUM, near Dartford, Kent.—Second Assistant Medical Officer, unmarried. Salary £100 a year, with board, lodging, washing, and attendance. Applications to the Clerk to the Visiting Committee, Guildhall, E.C.

COTON HILL REGISTERED HOSPITAL FOR MENTAL DISEASES, Stafford.—Assistant Medical Officer. Salary commencing at £100 per annum, with two annual increases of £25 each to a maximum of £150, with board, lodging, and washing.

EAST LONDON HOSPITAL FOR CHILDREN, Glamis-road, Shadwell, E.—Resident Medical Officer for two years. Salary £80 per annum, with board, residence, and laundry.

FISHERTON ASYLUM.—Assistant Medical Officer, unmarried. Salary £100 a year, with board, lodging, and washing. Apply to Dr. Finch, Salisbury.

GENERAL HOSPITAL, Birmingham.—Resident Surgical Officer for one year. Salary £100 per annum, with residence, board, and washing.

GENERAL INFIRMARY, Northampton.—House Surgeon, unmarried. Salary £125 per annum, with furnished apartments, board, attendance, and washing.

GREENWICH UNION INFIRMARY.—Assistant Medical Officer for the Infirmary and Workhouse. Salary £120 per annum, with furnished apartments, rations, washing, and £3 per annum in lieu of beer, subject to statutory deduction.—Applications to the Clerk to the Guardians, Guardians' Offices, East Greenwich, S.E.

GOLD COAST AND LAGOS COLONIES.—Appointments in the Government Medical Service. Initial salary £350 a year, with free quarters (or allowances in lieu thereof) and free passage. Applications to be addressed to the Assistant Private Secretary, Colonial Office, London.

GUEST HOSPITAL, Dudley.—Resident Assistant House Surgeon for six months. Board, lodging, and washing in the hospital provided.

HOXTON HOUSE ASYLUM, London.—Clinical Assistant. Board, lodging, and washing provided and an honorarium of £40 a year.

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House Surgeon. Honorarium at the rate of £50 per annum and board.

NORFOLK AND NORWICH HOSPITAL.—House Physician, for two years, unmarried. Salary £60 per annum, with board, lodging, and washing.

OLDHAM INFIRMARY.—Junior House Surgeon. Salary £50 per annum, with board and residence.

PORTSEA ISLAND UNION.—Resident Assistant Medical Officer for the Infirmary, Workhouse, and Schools. Salary at the rate of £150 per annum, rising £10 per annum to a maximum of £200 per annum, with rations and furnished apartments, subject to statutory deductions. Applications to the Clerk to the Guardians, 1, St. Michael's-road, Portsmouth.

ROYAL SOUTHERN HOSPITAL, Liverpool.—Resident Junior House Surgeon. Salary 60 guineas per annum.

ROYAL SOUTH LONDON DISPENSARY, St. George's-cross, S.E.—Honorary Surgeon.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior House Surgeon for six months. Salary £80 per annum, with board and lodging. Stimulants and washing not provided.

SEAMEN'S HOSPITAL, CRONSTADT.—Resident Medical Officer. Bachelor or widower without children. Salary £180 per annum, free lodging, lights, fuel, and attendance. Applications to the Chairman of the Hospital Committee, British Consulate-General, St. Petersburg.

STRETTON HOUSE ASYLUM, Church Stretton, Salop.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, rooms, washing, &c.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for one year. Salary £50 per annum, with board, apartments, laundress, and attendance.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and House Surgeon for six months.

WESTMINSTER GENERAL DISPENSARY, 9, Gerrard-street, Soho, W.—Third Honorary Physician.

Births, Marriages, and Deaths.

BIRTHS.

APPLETON.—On March 6th, at Ferndale, Britannia-road, Fulham, the wife of Thomas Alfred Appleton, M.R.C.S., L.S.A., of a son.

SLATER.—On March 3rd, at Osman House, Fortis-green, N., the wife of Leonard Slater, M.B., of a son.

TWEED.—On March 4th, at Higher Leyhill, Hembury Fort, Payhembury, Devonshire, the wife of B. Reginald Tweed, M.D., of a son.

MARRIAGE.

RODGERS—PARKINSON.—On March 2nd, at Priory-place Wesleyan Church, Doncaster, by the Rev. Joseph Westcombe (brother-in-law of the bridegroom), John William Rodgers, M.B., C.M., of Bedfield, Bristol, eldest son of the late John Marshall Prime Rodgers, of Queniborough Lodge, Leicestershire, to Helena Sophia, youngest daughter of the late George Parkinson, of Oakley House, Avenue-road, Doncaster.

DEATHS.

BROOKS.—On March 9th, Eliza Catherine, the beloved wife of Dr. Brooks, of Ludlow, deeply regretted.

LINGWOOD.—On March 2nd, at Raymond House, Upton-park, Essex, Henry Edgar Lingwood, L.R.C.P. Lond., L.S.A., aged 40 years.

MACGRATH.—On March 5th, at Lunham-road, Upper Norwood, Deputy-Surgeon-General Edmund J. MacGrath, of Kilbaron, Co. Clare, aged 60 years.

POPE.—On March 2nd, at Goldhawk road, W., the residence of his son, Dr. Campbell Pope, Edward Pope, M.R.C.S., L.S.A., of Tring, Herts, aged 86.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.).

TUESDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.).

WEDNESDAY (16th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.).

THURSDAY (17th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.).

FRIDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (19th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (14th).—SOCIETY OF ARTS.—8 P.M. Prof. W. N. Hartley: The Thermo Chemistry of the Bessemer Process. (Cantor Lecture.)

MEDICAL SOCIETY OF LONDON.—8.30 P.M. Dr. S. Taylor: Gastric Ulcer.—Dr. E. Kingscote: The Vagus Origin of Asthma and its Treatment.

TUESDAY (15th).—PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Dr. Eden: Lantern Demonstration of the Age Changes in the Placenta.—Dr. M. Fletcher: (1) A Uterus and its Appendages with Pedunculated Tumours; (2) A Double Vagina.—Mr. D'Arcy Power: A Cyst from a Case of Ovariotomy in a Child aged four months.—Dr. R. Crawfurd: A Tumour of the Large Bowel.—Dr. W. Hunter: A Case of Acromegaly with Casts and Formalin Preparations.—Dr. L. Freyberger: A Congenital Tumour of the Left Kidney and Origin of the Left Vertebral Artery from the Aortic Arch in the same Subject.

WEDNESDAY (16th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Mr. C. F. Rousselet: Exhibition of Mounted Rotifers.

NORTH-WEST LONDON CLINICAL SOCIETY (North-West London Hospital).—8 P.M. Annual General Meeting.

THURSDAY (17th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, W.).—8.30 P.M. Dr. W. Armstrong (Buxton): The Symptoms and Treatment of Gastric Dilatation.

SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Paper:—Mr. A. Coleman and Mr. H. Hilliard: On the Continuous Administration of Nitrous Oxide Gas for Prolonged Operations on the Mouth and Upper Air Passages. Clinical Cases.

FRIDAY (18th).—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Dr. D. S. Davies (Bristol): Milk-borne Enteric Fever in Clifton in relation to Distribution, Incidence of Attack, and Character of Illness.

LECTURES, ADDRESSES, DEMONSTRATIONS, ETC.

MONDAY (14th).—ROYAL COLLEGE OF SURGEONS.—5 P.M. Prof. C. Stewart: On the Vertebral Column, and some additions to the Museum.

LONDON POST-GRADUATE COURSE.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Dr. H. Tilley: Demonstration of Selected Cases.

THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—8 P.M. Dr. A. Hill: Diseases of Animals in relation to Meat Supply, Characteristics of Vegetables, Fish, &c., unfit for Food.

TUESDAY (15th).—ROYAL COLLEGE OF PHYSICIANS—5 P.M. Dr. J. R. Bradford: Observations on the Pathology of the Kidneys. (Goulstonian Lectures.)

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street).—4.30 P.M. Dr. T. D. Savill: On Electricity in the Diagnosis and Treatment of Diseases of the Nervous System.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Dr. J. Taylor: Jacksonian Epilepsy.

LONDON POST-GRADUATE COURSE.—Bethlem Hospital, 2 P.M., Dr. Craig: Alcoholic Insanity; Insanity with Syphilis; Insanity with Organic Brain Disease.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. Abraham: Epithelioma and Rodent Ulcer.

CITY ORTHOPÆDIC HOSPITAL.—5.30 P.M. Mr. J. Poland: Deformities of Bones after Injury.

ROYAL INSTITUTION.—3 P.M. Prof. E. Ray Lankester: The Simplest Living Things.

WEDNESDAY (16th).—ROYAL COLLEGE OF SURGEONS.—5 P.M. Prof. C. Stewart: On the Vertebral Column, and some additions to the Museum.

LONDON POST-GRADUATE COURSE.—Parkes Museum, Margaret-st., W., 4.30 P.M., Prof. A. Wynter Blyth: Sanitary Appliances.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Fowler: Prognosis in Valvular Disease of the Heart.

EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Dr. G. Carpenter: The Differential Diagnosis of Abdominal Diseases. (Post-Graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. P. Dunn: Cataract and Demonstration of Eye Cases.

THURSDAY (17th).—ROYAL COLLEGE OF PHYSICIANS.—5 P.M. Dr. J. R. Bradford: Observations on the Pathology of the Kidneys. (Goulstonian Lectures.)

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Willcocks: Demonstration of Medical Cases. (Post-graduate Class.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Barlow.

LONDON POST-GRADUATE COURSE.—Central London Sick Asylum, Cleveland-st., W., 5.30 P.M., Mr. Barwell: Clinical Lecture.

THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—Mr. H. R. Kenwood: Infectious Diseases and Methods of Disinfection.

ROYAL INSTITUTION.—3 P.M. Prof. J. A. Fleming: Recent Researches in Magnetism and Diamagnetism. (Tyndall Lecture.)

EAST LONDON HOSPITAL FOR CHILDREN (Shadwell, E.).—4 P.M. Mr. L. A. Dunn: Hernia in Childhood.

FRIDAY (18th).—ROYAL COLLEGE OF SURGEONS.—5 P.M. Prof C. Stewart: On the Vertebral Column, and some additions to the Museum.

LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: Actinomycosis and Glanders.

ROYAL INSTITUTION.—9 P.M. Mr. J. Mansergh: The Bringing of Water to Birmingham from the Welsh Mountains.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

OWEN *v.* GREENBERG.

AN interesting case was heard on Wednesday last before Mr. Justice Darling and a common jury, when a Mr. Edward Owen, the proprietor of one of those medicines which "remove female obstructions," proceeded against Messrs. Greenberg and Co., advertisement contractors. The case, which must entail upon very many newspapers a revision of their advertisement arrangements, was briefly as follows. The plaintiff paid the defendants in advance the price of certain advertisements to appear in *Pick-me-up*, a weekly illustrated newspaper. *Pick-me-up* changed hands and the new owner refused to insert Mr Owen's advertisements, who therefore brought an action against the advertisement contractors for breach of contract and damages. The plaintiff did not give evidence to prove that he had received any damages over and above the loss of the money paid for advertisements which had not appeared in *Pick-me-up*. The defendants said that they were merely agents. The jury found that the defendants had acted as principals, that the plaintiff had sustained no damage, and that the contracts for insertion of the advertisements were immoral; the result of which findings was that the defendants took out of court again the amount which they had paid in. It is clear that this case offers many points for legal disquisitions, but we are not concerned with them. What we are gratified to note is, firstly, that the proprietors of a newspaper of large circulation have refused in unmistakeable terms and under circumstances that might have entailed trouble upon them, to be the medium for the publication of disgusting advertisements; and, secondly, that a jury have decided that contracts for such advertisements are immoral. We beg our readers to notice this verdict and *to bring it to the attention of all their patients*. If the public insisted that their newspapers should not contain filthy incitements to the procuring of miscarriage and abortion the trade of Mr. Owen and his like would cease, while after this verdict of a common jury we do not see how any newspaper with claims to respectability can wittingly insert advertisements having such an appearance. It is to be noticed that this man advertised his stuff at three prices—viz., 4*s.* 6*d.*, 10*s.*, and 21*s.*, per bottle, the price rising, as he said, with the strength of the nostrum, and that Dr. D. H. Attfield's investigations showed all three samples to yield similar analytical results.

LEVICO ARSENIO-FERRIC MINERAL WATER.

MESSRS. A. AND M. ZIMMERMANN, of 9 and 10, St. Mary-at-Hill, E.C., in a communication to us regarding this now well-known ferro-arsenical water, state that they are now the sole consignees for Great Britain and the Colonies. The springs are situated at Levico, in the South Tyrol, and the waters yielded are of two strengths.

A GOOD RECORD OF WORK.

THIS week the Religious Tract Society's journal, the *Boy's Own Paper*, reaches its 1000th weekly number, a fact worthy of special notice considering the number of boys' journals—good, bad, and indifferent—that have appeared and disappeared during the past twenty years. The journal was started in answer to the demand of all classes for a serial journal for boys that, while sufficiently attractive to win and hold their interest, should be well written and possess a high moral tone. We are glad to learn that the *Boys' Own Paper* has been a successful affair from a business point of view from its inception, and this for two reasons. Firstly, it has often been our duty in expression of general medical opinion, to point out the harm that can be done to children by the dissemination of mischievous sensationalism, so that the success of a journal started in opposition to those which minister to ill-directed juvenile appetites is grateful to us. Secondly, out of the profits of the *Boy's Own Paper* the Religious Tract Society have made some very well-judged donations—for example, £600 to each of two life-boats, £400 to the Children's Ward of the London Hospital, and £750 to the Gordon Memorial Ward at Mr. Barnado's Homes.

"MR. HALL HAINS'S DEFENCE FUND."

To the Editors of THE LANCET.

SIRS,—Would you be kind enough to acknowledge in THE LANCET the under-mentioned subscriptions which I have just received for the fund? Mr. J. B. Mellroy, L.R.C.P. Lond., M.R.C.S. Eng., of Sydney, N.S.W. £1 1*s.*; Surgeon-Captain R. Caldwell, F.R.C.S. Eng., St. Helena, £1 1*s.* These subscriptions will be handed direct to Mr. Hall Hains. Thanking you in anticipation, I am, Sirs, yours faithfully,

HERBERT CARRE-SMITH

Turnham Green, Chiswick, March 8th, 1898.

CHINOSOL.

To the Editors of THE LANCET.

SIRS,—Might I ask through the medium of THE LANCET if any of your readers have had any extensive experience of chinosol in general practice and what conclusions they arrived at as regards its efficiency. Quite recently I used it for the first time in a case of a scalded foot, where a moist antiseptic dressing was required for several days. I must say the result was most satisfactory, but before using it in a case where it was absolutely essential that one should have complete faith in the antiseptic employed I should be glad to hear if anyone has used it in surgery—either operative or general—with satisfactory results.

I am, Sirs, yours faithfully,

March 7th, 1898. X. Y. Z

AN APPEAL.

IN response to the appeal on behalf of Miss Caroline and Miss J. J. Ireland, aged respectively fifty-eight and fifty-six years, whose friends are making an effort to raise a sum of money to give them a small fixed income either by investment or annuity, £203 6*s.* have been received. Donations will be most thankfully received by Mr. Stanley Brown, Cypress House, Dulwich-common, or by Mrs. John Ireland, Bourne End, Bucks. Particulars of the case will be found in THE LANCET, Dec. 18th, 1897, page 1634.

CRUSADE AGAINST SPITTING IN NEW YORK.

A MOVEMENT is afoot in New York to endeavour to stop as far as possible the habit of spitting in the streets, cars, and public buildings. This anti-expectoration crusade is being conducted by the Woman's Health Protective Association. The Health Board of New York have promised their hearty coöperation with the Association and will back up its efforts to abate the nuisance. It is stated that some of the street cars in New York are in such a disgraceful state from the prevalence of the spitting habit that they are not fit for a human being to enter. The President of the Association suggested as a remedy for this condition of things that the conductors should be supplied with tickets bearing the words: "Do not expectorate on the floor—by order of the Health Board," to be handed to passengers who are seen breaking the law. It is thought that this will give comparatively little offence to the offender and will thus prevent unpleasant scenes. On the reverse side of the ticket will be the words: "Keep this in your vest pocket," designed to prevent the violation of the ordnance against scattering papers on the sidewalks and in cars. The Association intends to devote most of its time to the expectoration question until it is settled either by the enforcement or repeal of the existing laws.

A DISCLAIMER REQUIRED.

A CORRESPONDENT draws our attention to the following testimonial which is being published in the lay press by the Trilene Company whose tablets, it is claimed, will safely reduce weight and cure corpulency permanently:—

> Surgeon-General E. S. Brander, M.D., writes: "As far as my experience goes your tablets form an excellent preparation for reducing weight."

Surgeon-Major E. S. Brander, M.B., is a *bonâ-fide* officer and medical man as we see from reference to the Medical Register and Directory. It is incumbent upon him to disclaim the unfortunate publicity he may be now receiving as the advocate of the extravagant claims of the Trilene Company.

INDISCRETION.

To the Editors of THE LANCET.

SIRS,—I have had occasion recently to notify three cases of puerperal fever to the medical officer of health for this district, all occurring in the practice of the same midwife and one fatal. The midwife has been suspended for four months by the medical officer of health, who asked her whether she was friendly with me, mentioning my name. A few days afterwards I hear that the midwife is going about saying that I am the cause of her suspension. Of course, this is the truth, but such a statement is calculated to harm a private practitioner who is only doing his duty by notifying these cases. Is it any part of the duty of the medical officer of health to mention the name of the notifying practitioner to the midwife or to anyone? Is it not a breach of confidence, for the medical officer of health is paid to execute this disagreeable task of suspending a midwife, and so ought to take all the blame? I shall be obliged if you will insert this letter in THE LANCET and give me a reply.

I am, Sirs, yours truly,

March 8th, 1898. PILULA.

*** We consider the conduct of the medical officer of health, as described by our correspondent, very indiscreet.—ED. L.

THE LATE DR. CRONYN'S WILL.

A UNIVERSALLY respected, and able American practitioner has just passed away at a ripe age in Dr. Cronyn of Buffalo. Dr. Cronyn's high status as a citizen and a man of science renders the tribute which he pays in his last testament to THE LANCET (among other scientific serials) very gratifying to us. By his will he has left his valuable medical library for the use of his son, and afterwards to Niagara University, "on condition that subscriptions be kept up for THE LANCET, *Practitioner*, Sydenham Society's Publications, and *Brain*."

THE PRUDENTIAL ASSURANCE COMPANY, LIMITED.

THE report and accounts of this well-known company for the year 1897 have just been issued and show a considerable increase over the figures for 1896, large as they were. In the ordinary branch the number of policies issued during the year was 65,893, assuring the sum of £6,698,755, and producing a new annual premium income of £365,996. The premiums received during the year were £2,774,264, being an increase of £231,002 over the year 1896. The claims of the year amounted to £707,643. The number of deaths was 5038 and 656 endowment assurances matured. The number of policies in force at the end of the year was 497,327. In the industrial branch the premiums received during the year were £4,793,591, being an increase of £412,798. The claims of the year amounted to £1,823,338. The number of deaths was 192,359 and 1876 endowment assurances matured. The number of free policies granted during the year to those policy-holders of five years' standing who desired to discontinue their payments was 60,848, the number in force being 549,889. The number of free policies which became claims during the year was 10,716. The total number of policies in force at the end of the year was 12,546,132; their average duration exceeds eight and a quarter years. The assets of the company in both branches, as shown in the balance-sheet, are £30,438,337, being an increase of £3,379,226 over those of 1896. A supplement showing in detail the various investments is published with this report. A sum of £50,000 was set aside out of the surplus for 1896 in celebration of the company's jubilee and a further sum of £50,000 has been set aside out of the surplus for 1897. This whole sum is to be divided among the members of the out- and in-door staff, not more than £50 to be awarded in any single case. The whole number of the staff is 15,000; we do not know whether the medical referees are included among this number, but as the flourishing condition of the company is in great part due to the care with which these gentlemen carry out their duties we should hope that they will be allowed to share in the profits.

Mother.—A senior student may under certain circumstances assist a practitioner, but we do not think that this applies in the case under consideration. There is no society to which to apply for aid. The young man might, perhaps, obtain a post as dispenser in a town where there is a medical school so that he could continue his studies. This would be the best thing he could do.

American.—The degree is not registrable. The medical profession in Great Britain do not consider an unregistered practitioner as a qualified man, though legal decisions on the matter have been inconclusive. A person not on the Medical Register cannot hold appointments, sign death certificates, or act officially as a medical man.

Thesis.—There is not, so far as we are aware, any one treatise on fractures that would be useful to modern students, but such a treatise is unnecessary, as every information will be found in the standard works on surgery. Mr. T. Pickering Pick has written a monograph entitled "Fractures and Dislocations."

Candidate.—We regret that the question should have been overlooked. 1. Professor Coats's "Manual of Pathology." 2. Dr. Lauder Brunton's "Text-book of Pharmacology, Therapeutics, and Materia Medica." 3. There is not an atlas within the pecuniary limits named which we can personally recommend.

R. T.—We do not recommend individual practitioners, and the medical man in charge of the case is the proper person to suggest the name of a consultant.

J. A. R.—Much can be done by careful advice and plain speaking need not be indelicate. All parents and schoolmasters should be ready to deal with the matter.

Mater should consult the family medical man. There is nothing unusual whatever in the symptoms.

Mr. J. H. Thompson.—We have no information beyond that which is appearing in our columns.

B. G. Alpha has neglected to give his or her full name and address.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 10th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Mar. 4	29·80	N.E.	...	66	45	35	35	38	Overcast
,, 5	29·82	N.E.	...	83	44	35	35	36	Cloudy
,, 6	29·80	N.E.	...	66	44	33	35	38	Cloudy
,, 7	29·98	E.	...	73	45	34	34	36	Fine
,, 8	29·99	N.E.	...	47	42	34	34	36	Overcast
,, 9	30·09	N.E.	...	56	46	36	37	40	Overcast
,, 10	30·21	N.E.	...	64	44	35	35	37	Cloudy

During the week marked copies of the following newspapers have been received: *Newcastle Leader, Doncaster Chronicle, Bridgwater Independent, Richmond Herald, South Wales Daily News, Times of India, Pioneer Mail, Scotsman, Wolverhampton Chronicle, Southport Visitor, Lynn News, Leeds Mercury, Architect, Birmingham Post, Brighton Gazette, Western Morning News, Bristol Mercury, Bradford Daily Telegraph, Pullen's Kent Argus, Manchester Guardian, Builder, Sussex Daily News, Liverpool Daily Post, Leicester Post, Walsall Observer, Yorkshire Post, Sheffield Telegraph, Cheltenham Free Press, East Anglian Daily Times, Indian Daily News, Glasgow Record, Eastern Telegraph, Nottingham Daily Guardian, Financial Post, West Middlesex Herald, Public Health, Willesden Chronicle, Reading Mercury, Nottingham Daily Express, Local Government Chronicle, Hertfordshire Mercury, City Press, Sanitary Record, Mining Journal, Surrey Advertiser, Local Government Journal, Weekly Free Press and Aberdeen Journal, Oban Times, Minneapolis Tribune, Leith Observer, Advocate of India (Bombay), Liverpool Courier, Nottingham Evening Post, Yarmouth Mercury, Witney Gazette, Stockport Chronicle, Gloucester Standard, Darwen Post, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Mons. J. Astier, Paris; Messrs. Allsays and Onions, Birmingham; Messrs. Armour and Co., Lond.; *Archives de Parasitologie*, Paris; Anderson's College Medical School, Glasgow, Secretary of; Messrs. Arnold and Sons, Lond.; Aston Union, Clerk of; Aqua, Lond.

B.—Mr. B. W. Bond, Poole; Sir W. Besant, Lond.; Dr. A. I. Bolton, Constance; Dr. J. Rose Bradford, Lond.; Messrs. Brady and Martin, Newcastle-on-Tyne; Mons. J. Bardinet, Bordeaux; Messrs. Burgoyne, Burbidges, and Co., Lond.; Mr. W. Brown, Greenock; Bibliothèque Universitaire, Toulouse, Librarian of; Birkenhead Union, Clerk of; Bosco, Lond.; Borough Hospital, Birkenhead, House Surgeon of; Mr. L. A. Bidwell, Lond., British Balneological and Climatological Society, Lond., Secretary of; Mr. H. Butterfield, Northampton.

C.—Dr. A. Cordes, Cahors; Mr. R. Campbell, Lond.; Mr. E. Campbell, Lond.; Mr. M. Cheyne, Lond.; Mr. W. H. Charlton, Newcastle-on-Tyne; Mr. H. Callaghan, Tottenham; Mr. J. M. Cronyn, New York; Mr. J. B. Cameron, Lond.; Messrs. T. Christy and Co., Lond.

D.—Mr. H. Downes, Lond.; Miss Dodson, Essex; Mr. R. Duffs, Liverpool; Dr. A. T. Davies, Lond.; Messrs. W. Dawson and Sons, Lond.; Sir W. Dalby, Lond.

E.—Dr. J. Erskine, Glasgow; Dr. M. D. Eder, Lond.

F.—Dr. P. J. Freyer, Lond.; Mr. G. Foy, Dublin; Messrs. J. S. Fry and Son, Bristol; Mr. J. K. Frost, Kingston; Mrs. Fryer, Lond.; Mr. H. Frederick, Lond.; Fisherton House Asylum, Salisbury.

G.—Mr. L. Gilbert, Chelsea; Dr. A. Gardner, Kirbymoorside; G., Lond.; Guest Hospital, Dudley, Secretary of; Miss F. Girdlestone, Sunningdale; Dr. L. Guthrie, Lond.; Mr. W. Gedrey, Blackburn; Messrs. C. Griffin and Co., Lond.

H.—Mr. L. N. Holiday, Amlwch; Mr. Victor Horsley, Lond.; Mr. J. Howell, Attleborough; Mr. W. Hay, Hull; Mr. E. Henry, Porthleven; Mr. J. Heywood, Manchester; Hoxton House, Lond., Medical Superintendent of.

I.—Dr. R. N. Ingle, Bedford.

J.—Dr. F. Jeffery, Bury; Messrs. Johnsen and Jorgensen and Co., Lond.; Mr. A. Jones, Lond.; Dr. C. E. Jennings, Lond.

K.—Herr S. Karger, Berlin; Messrs. H. S. King and Co., Lond.

L.—Mr. H. W. Littoms, Lond.; Mons. H. Le Soudier, Paris; Lozier Manufacturing Co., Lond.; Messrs. Longmans, Green, and Co., Lond.

M.—Dr. A. MacGregor, Lond.; Dr. J. Murphy, Sunderland; Dr. H. J. MacKay, Devizes; Mr. W. Milligan, Manchester; Medical Society of Victoria, Melbourne, Hon. Secretary of; Signor E. Marelli, Genoa; Messrs. Mather and Crowther, Lond.; Mutual Life Insurance Co. of New York, Lond., General Manager of; Mrs. Maw, Middleton; *Münchener Medicinische Wochenschrift*, Munich, Editor of; M., Lond.; Messrs. J. and C. Mort, Stafford; Maltine Manufacturing Co., Lond.; Mr. A. Mottram, Norwich; Mr. A. H. Minton, North Devon; Mr. J. Mackenzie, South Kirkby; Dr. A. McCausland, Lond.; Manchester Southern Hospital, Hon. Secretary of.

N.—North West London Clinical Society, Hon. Secretary of; Messrs. G. Newnes, Lond.

O.—Dr. J. Oliver, Lond.; Messrs. Oakes Bros. and Co., Lond.; Old Bushmills Distillery Co., Secretary of; Oldham Infirmary, Secretary of; Messrs. Orridge and Co., Lond.

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R.—Dr. C. Reinhardt, South Stoke; Royal Southern Hospital, Liverpool, House Surgeon of; Messrs. J. Richardson and Co., Leicester; *Revue Internationale de Rhinologie, &c.*, Paris; Royal Free Hospital, Lond., Secretary of; Messrs. Reynolds and Branson, Leeds; Rhenish Rubber and Celluloid Co., Lond.; Royal Meteorological Society, Lond., Secretary of; Messrs. Ross, Lond.

S.—Mr. F. J. Smith, Manchester; Dr. J. B. Spence, Lichfield; Swansea Hospital, Secretary of; Messrs Spiers and Pond, Lond.; Mr. G. Slater, Sheffield; Dr. W. J. Smith, Lond.; Smoke Distributing Mouthpiece Co., Belfast; St. Mary's Day Nursery and Hospital for Sick Children, Plaistow, Secretary of; Dr. A. E. Sansom, Lond.; Messrs. Street Bros., Lond.; Statim, Lond.; Mr. E. J. Smyth, Lond.; Messrs. Slade, Lewis, and Slade, Lond.; Messrs. Stubbs, Newcastle-on-Tyne; Mr. T. Smith, Lond.; Scarborough Hospital, Hon. Secretary of; Dr. N. T. Stick, Reading; Dr. M. T. Sadler, Lond.; Messrs. Slacke and Brownlow, Gorton; Stretton House Asylum, Church Stretton, Superintendent of; Dr. J. Savege, Hull.

T.—Mr. C. H. Tattersall, Salford; Dr. J. H. Thompson, Nottingham; Dr. J. C. Thresh, Chelmsford; Mr. W. Turner, Poole; Messrs. Teff and Co., Bristol.

V.—Messrs. C. Vaux and Sons, Sunderland.

W.—Mr. H. J. Waring, Lond.; Dr. A. M. Weir, East Sheen; Mr. I. J. Wood, Bradford; Dr. E. Walford, Cambridge; Miss H. Walker, Lond.; Wills, Ltd., Lond.; Messrs. J. Wright and Co. Bristol; Westminster General Dispensary, Secretary of; Messrs. Whitaker, Lond; Messrs. Willing, Lond.

Z.—Zomē'a Co., Birmingham.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. R. R. Anderson, Fern Hill; Alternate, Lond.; Apollinaris Co., Lond.; Dr. R. G. Alexander, Halifax; A. B., Lond.; Aurum, Lond.; Mr. W. J. Allkin, Denton; Messrs. Armbrecht and Co., Lond.; Aurifer, Lond.; Apotheke, Lond.

B.—Dr. A. Brown, Rayleigh; Mons. O. Berthier, Paris; Mr. C. J. Bond, Leicester; Messrs. Battle and Co., Neuilly-sur-Seine; Dr. W. W. Baldwin, Florence; Mr. F. C. Brett, Bridlington; Dr. J. G. Bent, Market Weighton; Mr. C. Birchall, Liverpool; Mr. F. R. Bennett, Lond; Dr. F. W. Burton-Fanning, Norwich; Birmingham General Hospital, Secretary of; Mr. W. J. Beatty, Stockton-on-Tees; Mr. A. G. Bennett, Stanmore; Beta, Bristol; B., Lond.

C.—Dr. W. S. Carroll, Pontypridd; Messrs. H. and W. Cox, Leicester; Coton Hill Hospital, Stafford, Clerk of; Mr. J. Clarke, Hitchin; Messrs. Clark and Co., Lond.; Mr. T. S. Carter, Leeds; Signor E. Castoldi, Brescia, Italy; Mr. J. Couldrey, Scunthorpe; Dr. O. H. Chapman, Grimsby; Dr. C. Childs, Lond; C. F., Lond.; Crescens, Lond.; Cambs, Lond.; Messrs. Crosby, Lockwood, and Son, Lond.; Cusso, Lond.; Messrs. A. Cohen and Co., Lond.

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E.—Dr. R. Edwards, Colwyn Bay; Messrs. W. and T. Evans, Cork; Epsilon, Lond; Eagle, Lond.

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P.—Mr. H. J. Phillips, Teignmouth; Mr. C. P. Plant, Buxton; Primus, Lond.; Practitioner, Newcastle-on-Tyne.

R.—Mr. H. R. Rice, Stourport; Dr. J. W. Rodgers, Bristol; Retreat Private Asylum, Armagh, Proprietor of; R. S., Lond.; Dr. Redwood, Rhymney; Roberts, Edgbaston; Mr. F. Reynolds, Lond.; Roentgen, Lond.

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T.—Mr. A. G. C. Thomson, Millbrook; Taipo, Lond; Mr. H. C. Titterton, Boreham; Mr. W. Thomas, North Featherstone; Dr. R. Turner, Kirkcaldy; Treatment, Lond., Torquay Medical Society, Hon. Secretary of; Dr. Tylecote Sandon.

U.—University College of South Wales, Cardiff, Secretary of.

V.—Vidua, Lond; V., Lond.

W.—Dr. A. Wallace, Colchester; Messrs. Wenborn and Son, Lond.; Mr. H. B. Wilkinson, Nottingham; W. L. F., Lond.; Mr. J. Woodward, Swadlincote; Messrs. H. Whewell and Co., Bolton; Wyleys, Ltd., Coventry; Mr. F. Whincup, Shaldon; Wilderdale, Ilfracombe; West End Surgery, Lond.; Messrs. W. Warden and Sons, Lond.; Whitehaven, &c., Infirmary, Secretary of.

X.—X., Lond.; X., Clitheroe.

Z.—Zeno, Lond.; Z., Lond.

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